SOAP

SANITARY CHEMICALS

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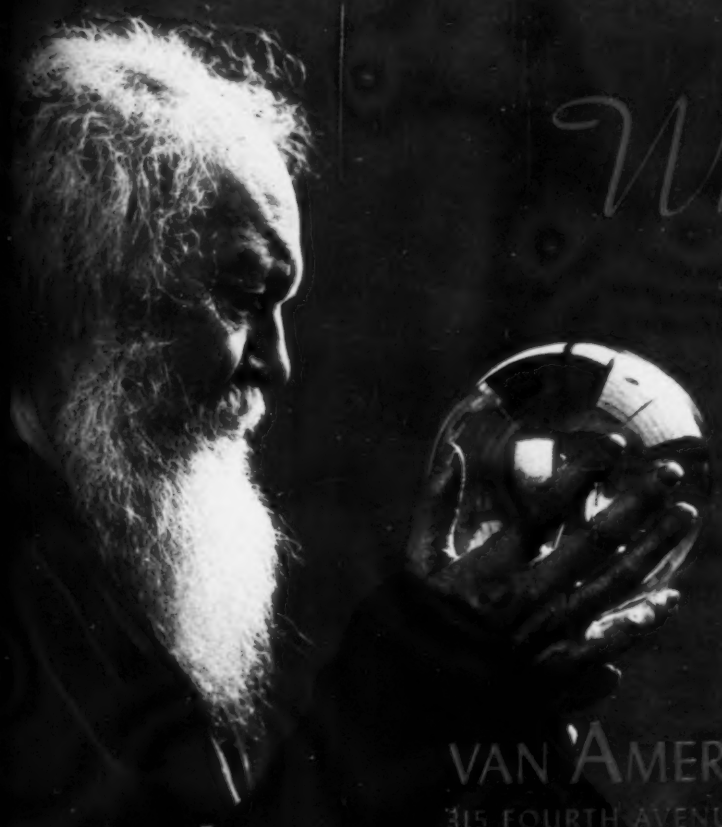

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Volume XIX Number 4

SOAP and SANITARY CHEMICALS

Reg. U. S. Pat. Office

APRIL
1943

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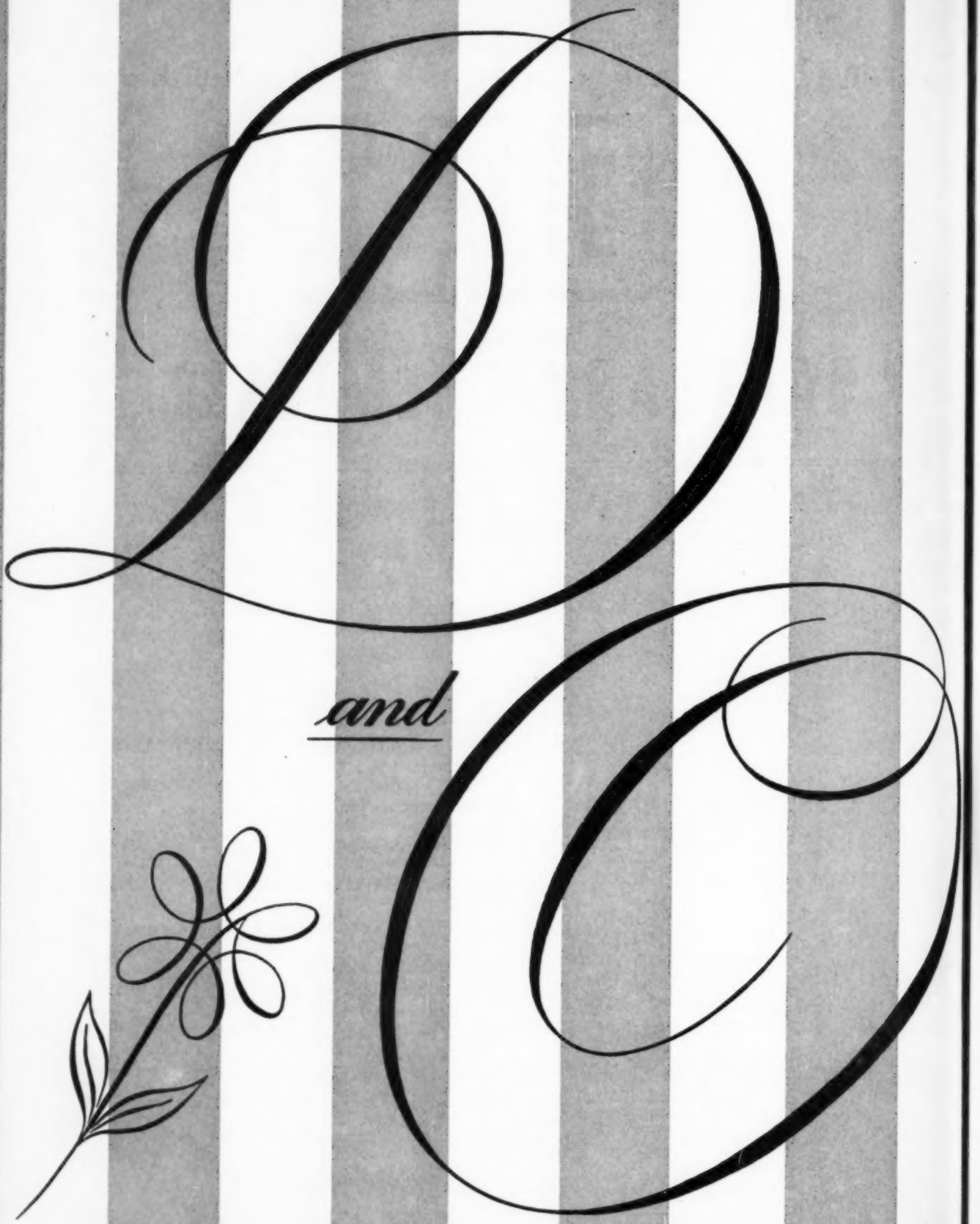

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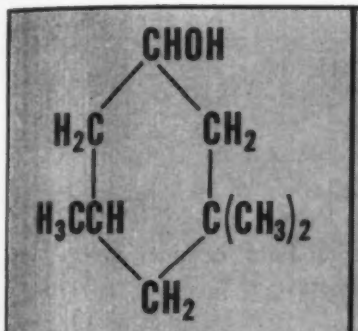

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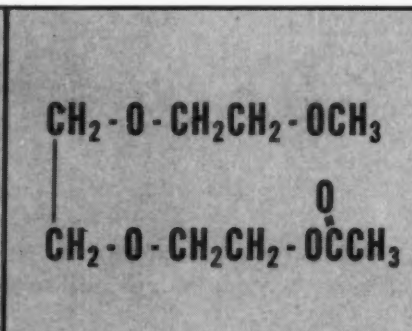
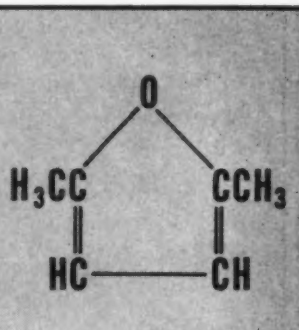


METHOXYTRIGLYCOL ACETATE



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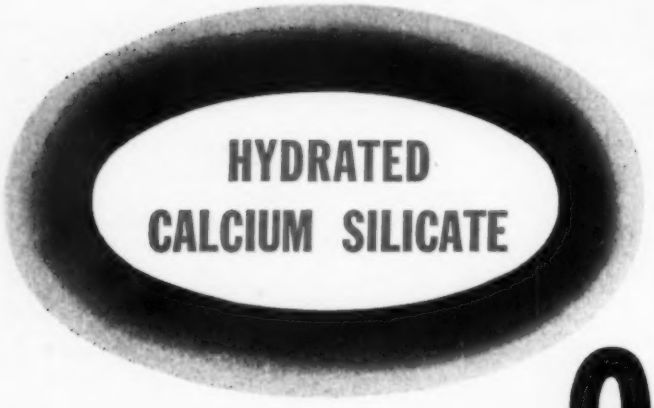
It's a **HYSAN** *Quality Product*

Combines
HIGHER GLOSS and LESS SLIP
IN ONE AND THE SAME WAX

Can you use this new pigment?



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*Another Columbia Chemical

Blood Plasma Saves Lives—
Have You Contributed?

WHAT SILENE IS: SILENE is a new chemical pigment—a white, finely divided, precipitated, hydrated calcium silicate, with the following approximate analysis:

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SiO_2	67.0
Loss on Ignition	14.0

pH in water suspension	10.1
Specific Gravity	2.10
Bulk Density	15 to 16 lb. per cu. ft.
Refractive Index	1.475

CHARACTERISTICS OF SILENE: SILENE is composed of very fine particles present in the form of small, highly friable agglomerates that are readily dispersed in the course of milling into rubber, paint, or vehicles. SILENE also can be redispersed in water.

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SODA BRIQUETTES · MODIFIED SODAS · CAUSTIC ASH · PHOSFLAKE · CALCENE** · CALCIUM HYPOCHLORITE

*Hydrated Calcium Silicate **Precipitated Calcium Carbonate

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COLUMBIA CHEMICAL DIVISION
GRANT BUILDING · PITTSBURGH, PA.

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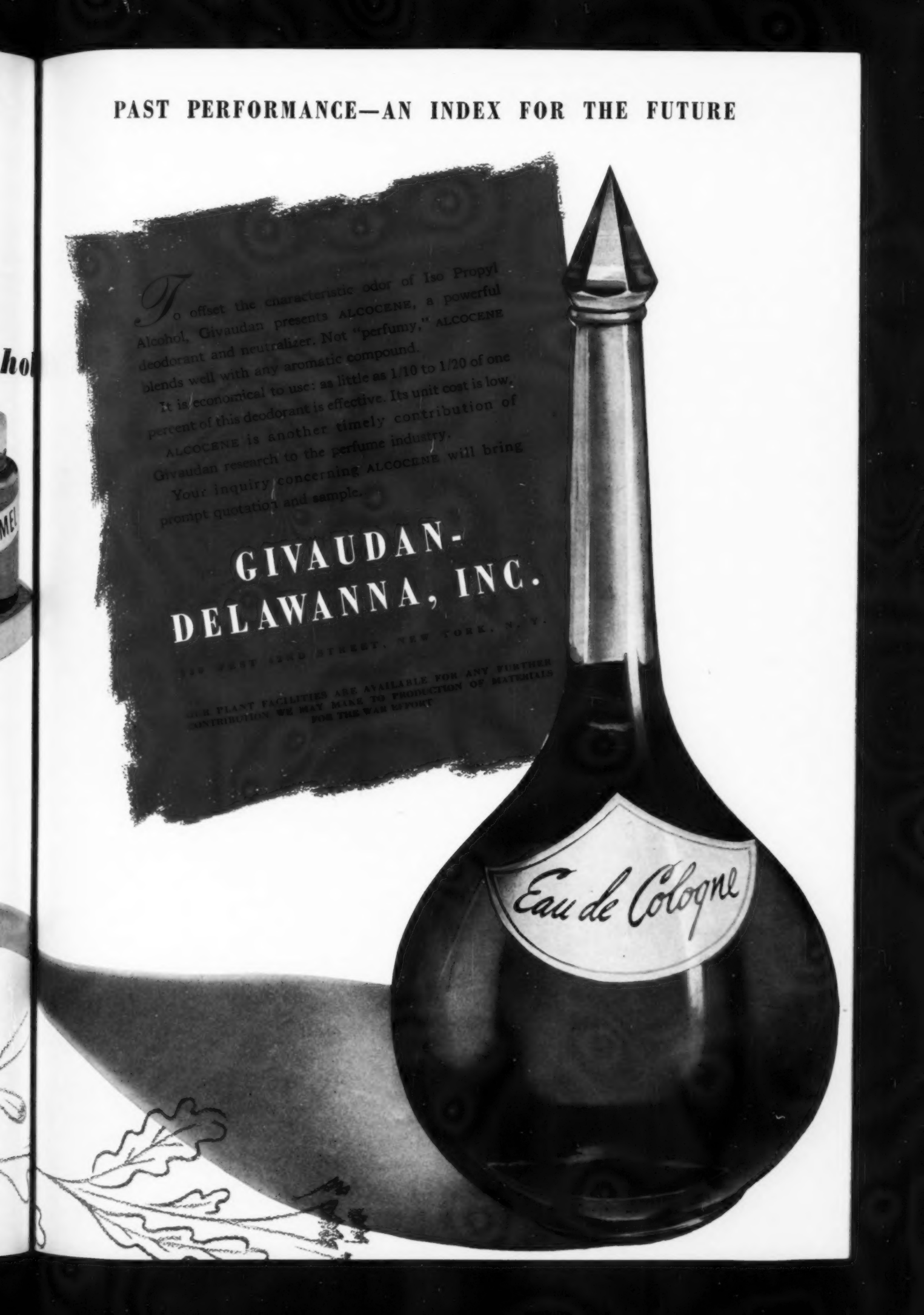
ALCOCENE...

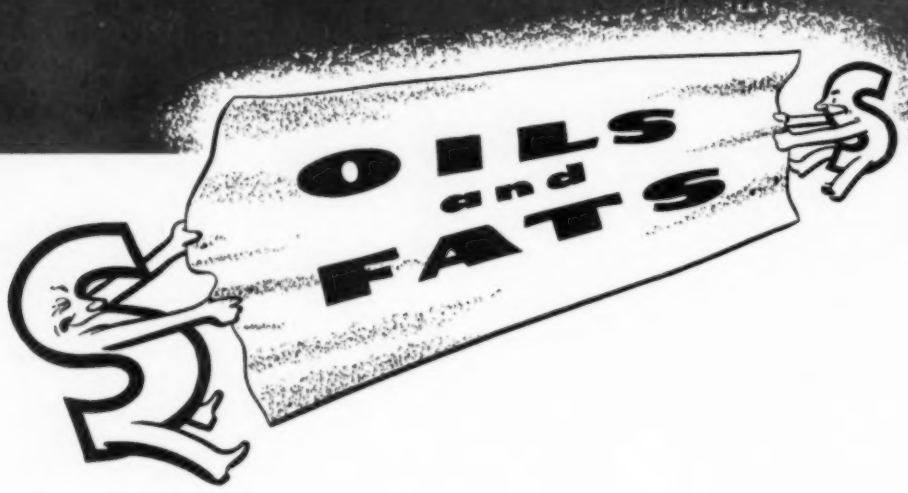
new deodorant for

Iso Propyl Alcoho

PAST PERFORMANCE—AN INDEX FOR THE FUTURE


To offset the characteristic odor of Iso Propyl Alcohol, Givaudan presents ALCOCENE, a powerful deodorant and neutralizer. Not "perfumy," ALCOCENE blends well with any aromatic compound.
It is economical to use: as little as 1/10 to 1/20 of one percent of this deodorant is effective. Its unit cost is low.
ALCOCENE is another timely contribution of Givaudan research to the perfume industry.
Your inquiry concerning ALCOCENE will bring prompt quotation and sample.
GIVAUDAN-DELAWANNA, INC.
OUR PLANT FACILITIES ARE AVAILABLE FOR ANY FURTHER CONTRIBUTION WE MAY MAKE TO PRODUCTION OF MATERIALS FOR THE WAR EFFORT
Eau de Cologne

use Standard Silicates
TO STRETCH YOUR DWINDLING



Facing the strong probability of less oils and fats available for soap-making in future months, you can use STANDARD SILICATE to make your soap stocks go farther. For soap in flake, bar or powder form, and for fabricated compounds such as metal cleaning products, cleaning compounds for buildings, factories, garages, etc., the use of Standard Silicate will enable you to maintain high quality and reduce costs.

Standard Technical Service will gladly help you make best use of your Silicates and adapt your formulas to today's changing conditions. You will find welcome "plus" values in the increased detergency, retarded rancidity and better sudsing. *Save* and *conserve* with Standard Silicates!

DIAMOND ALKALI COMPANY
STANDARD SILICATE DIVISION

Plants at Cincinnati • Jersey City • Lockport, N. Y. • Marseilles, Ill. • Dallas, Texas

GENERAL OFFICES . . . PITTSBURGH, PA.

Javonella

Perfect for Perfuming

★ LAUNDRY SOAPS ★ WASHING POWDERS ★ LIQUID CLEANSERS ★ POLISHES, ETC.

EVEN when oil of citronella was low in price and easy to obtain, JAVONELLA was a reliable favorite. A great many manufacturers preferred its finer, cleaner odor, its uniform quality and consistent economy. And now that Citronella is so high in price and difficult to get, JAVONELLA is more important to you than ever before.

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Countless Miles of Floors

ARE MAINTAINED BY "BEAMAX"

YEARS OF USER-SATISFACTION ARE BEHIND THIS PRODUCT

"BEAMAX" is well known to thousands of users as a lustrous-drying Liquid Wax that always delivers full value. Economical—because a thin coat dries in a few minutes to a hard, lustrous beautiful finish, without polishing. It smooths itself. All types of floors—including rubber, wood, linoleum, rubber tile, asphalt tile, mastic, terrazzo and cement — are easily kept clean by sweeping or using a dry mop. "BEAMAX" will not solidify in storage. It has no unpleasant odor. Samples and prices of "BEAMAX" will be sent to you on request.

THE DAVIES-YOUNG SOAP COMPANY
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Thus from a meager beginning, has come a tremendous production capacity for chemical products of quality and dependability.

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

New York · Chicago · St. Louis · Houston · San Francisco · Los Angeles · Seattle

JONES TOGGLE PRESSES

...for soap

...deodorant blocks

...tile and... ?

SOAP pressing thirty-five years ago on the old foot press, was a tedious and hazardous process. The best operator rarely stamped more than twenty-five cakes a minute. Our first press, though admittedly crude, was automatic, ran at the relatively high speed of 60 per minute, and was thoroughly safe for operators. Now, after thirty-five years of constant improvement, the Jones Soap Press, with its Toggle Motion, and simple, positive design, has made soap pressing efficient as any operation or process in all industry.

Other important uses for Jones presses are of more recent development. They have been used with outstanding success to press both tile and deodorant blocks. These operations, formerly slow and expensive, are now as efficient as soap pressing.

We are now experimenting with the pressing of dehydrated foods into block form. The results promise a rapid means of preparing these foods for convenient packaging and shipping.

If your product requires compression into block form, let us hear from you. It is likely that it can be handled on a Jones Toggle Press at a fraction of your current cost.

The Standardized CONSTANT MOTION CARTONER packages bottles, jars, tins, collapsible tubes and many other articles. It feeds, folds, and inserts direction sheets and corrugated board liners with the loads.

R. A. JONES & COMPANY, INC.

P. O. BOX 485 CINCINNATI, OHIO

EDITOR

THE quota for soap manufacture of foots and fatty acids made from foots has been cut from 150 per cent to 100 per cent of 1941-42 use by an amendment to oil and fat Order M-71 recently issued by the Food Distribution Administration of the Department of Agriculture as F.D.O. 42. This is indeed scant consolation to many soapers who find themselves faced with the most critical raw material situation in years. The brunt of the effects of the original order fell most heavily upon the shoulders of smaller manufacturers. By the time relief is obtained from the amended order,—and there is no assurance that any relief will be obtained even a year hence,—it may conceivably be too late to help those who most need relief.

Because some soapers have been unable for the past 60 days to buy fatty acids, soap stock and foots, not to mention tallow and greases, their ire has been aroused and a few have not hesitated to express their feelings in very ugly words. That resentment, particularly among smaller soap makers, should have been aroused by events of the past few months is not unusual. That they awoke to find the market pretty well cleaned of foots and soap stock, and fatty acids difficult to obtain, grows directly out of the demand diverted into these products by Order M-71. Actually, M-71, as is now quite well recognized, invited present conditions when it placed a 150 per cent quota on foots and fatty acids made from foots. With the fat and oil quota at 84 per cent and practically everything except tallow and greases taken out of the soap picture by the edible oil restrictions, demand had no other place to turn. The Soap and Glycerine Unit did not anticipate this situation; neither did many soapers. But those who did, apparently bought up everything available.

The present frame of mind of many soapers in the light of raw material developments under M-71 is one of bitterness. Some of them feel that they have been jobbed by events behind the scenes and are not hesitant to offer their versions by way of explanation. The feeling that the stable door has been locked after the horse has been stolen is quite general,—and the hope for any real or prompt relief from the cut in the foots and fatty acid quota is conspicuous by its absence.

SOME blunt advice to his fellows in the soap industry has come from a western manufacturer, and it appears to be good advice, the sum and substance of which is to cut sales and cut them drastically right now. If soapers who are short of raw materials and whose outlook to obtain further supplies is dark,—and whose isn't?—continue to attempt to sell every pound of soap possible in order to make up a reduced profit margin by larger tonnage, they may find themselves out of business before the year is over. To reduce volume is to extend raw materials that much further and to postpone the time when an enforced shut-down may come. At this time, concentration of effort should be on staying in business, not on making the same or more net profit than last year. Some soapers have for months been resigned to such policy and have acted ac-

cordingly, but there are those who have had other ideas. At any rate, it is advice from a practical soaper worth thinking about.

WITH experienced workers being siphoned off from almost all civilian industries in ever growing numbers by the armed services and war plants, the man-power problem becomes increasingly acute. The soap industry is no exception. Particularly, the smaller and medium size companies are being hit hard. The opportunity for quick replacement of key men becomes smaller as time goes on. In this respect, a recent suggestion that every key job should have a man in training for that job in addition to the individual who fills it, has some merit. But the problem is where to obtain men to train for any job while defense work is so lucrative. And it is this system of guarding against sudden loss of workers which has induced some defense plants to overstaff, and which has been criticized as a waste of man-power. In the large factory, the greater total of employes in itself gives more flexibility in meeting man-power emergencies. But to the small soaper, loss of a key man today is often a calamity. And the outlook is none too promising. Training of women for regular soap plant work may be forced upon some manufacturers before the year is out.

ENFORCED substitution of definite percentages of raw materials in soap products in place of oils, fats and fatty acids is reported still under consideration in Washington, but is said to be looked upon with less favor than heretofore. Opposition from many soapers has been much stronger than anticipated. The belief has been expressed, however, that irrespective of any action by the Soap and Glycerine Division of F.D.A., there will be a wide increase in the use of substitute materials such as tallol, rosin, and others which may this year run as high as a half-billion pounds.

Naturally, the question has been raised as to the attitude of O.P.A. toward wider use of fat substitutes in the light of the order of last July freezing soap quality, sizes and prices. Although no official opinion has been expressed, the belief is current that O.P.A., fully cognizant of the fat situation, will not indulge in hair-splitting, and will permit manufacturers to judge the serviceability of their products where formulas have been revised, provided that the content of anhydrous soap is not materially reduced.

In spite of controversies over the merits of rosin, tallol, and the like, if soap production is to be maintained at suitable levels, more fat substitutes will have to be used. A government decree would only mean that this would be mandatory instead of voluntary.

AN increasing number of complaints from smaller soapers is heard as to the super-secret nature of the deliberations of the Soap Industry Advisory Committee. Obviously the whole industry cannot sit in on these discussions, and equally obviously there are some subjects covered which, because we are at war, cannot be freely publicized. We do feel, however, that there is some justice in the smaller soapers' complaint that they are being kept too completely in ignorance of what is going on in these committee meetings, not even knowing in many cases that such meetings have been held. We cannot quite feel that such complete secrecy is necessary,—nor advisable. It inevitably arouses suspicion, and leads to charges such as those voiced in Washington last month before a House Committee, charging a "leak" on the coconut oil freeze order. Until some program is adopted of keeping the soap industry at large more closely advised of matters that come before the Industry Committee, such suspicions will inevitably persist.

ROSIN IN SOAP . . .

The place which it can fill in the growing shortage of oils and fats for the soap kettle

By Paul Mayfield

Director of Sales, Naval Stores Dept.
Hercules Powder Company

A YEAR ago there was little thought of a shortage in the over-all total of soapmaking materials in this country. A coconut oil shortage, yes, but this country had plenty of other fats and oils on which it could get along. The idea then was that at least we would have enough soap. Today, the prospects are different. The fortunes of a wartime economy and greater needs for food now betoken a soap-material scarcity; and rosin is one of the materials most logical for relief.

Use of rosin in soap is not new. For many years this plentiful material from our Southern pines has been a standard ingredient in soap of certain grades. As far back as the War Between the States (1861-65), rosin was used in the South as a soapmaking material. A quotation from page 30 of Gambles Naval Stores Year Book of 1921—History, Production and Consumption—is of particular interest today:

"An economical soap without grease is made from rosin. To four gallons of strong lye, add ten pounds of distilled rosin or eight pounds of pure gum not distilled and free from trash; boil steadily until there is no rosin to be seen—and if the quantity of lye is not sufficient, add more and continue to add until the rosin disappears, boiling until it makes a brown jelly soap. This soap has been made in St. John's Parish, South Carolina, during the past year (1862) and is stated to be equal to the best soap made with grease."

No one today would advocate the production and use of a 100 per cent rosin soap for general household use. But there is evidence enough to indicate the value of rosin as a soap ingredient when it is used properly and in reasonable proportions relative to other soap stocks.

The figures in Table I show the extent to which rosin has been used in soapmaking since 1920. The percentage rosin in the total saponifiables has varied between 9.6 per cent in 1922 and 4.2 per cent in 1940. The ratio of rosin in proportion to the total saponifiables has tended to decrease through the years because of the general belief that rosin could not be used in chip and powdered soaps, the volume of which has been increasing in recent years. Use of rosin in soap, furthermore, has been proportionate to fat prices. When fat prices were high and those of rosin low in comparison, more rosin was used. Then when fat prices were low, less rosin was used.

The United States production of rosin can furnish a substantial amount of material which the soapmaker may draw upon as other products are diverted from his use. This is shown by the data in Tables I and II. During the past few years approximately two billion pounds of saponifiables per year have been used in making soap. The annual production of rosin through this same period has approximated one billion pounds, while the actual use of rosin in soap has ranged in the neighborhood of only 100 million pounds.

Use of rosin in soap in this country during past years has been confined largely to brown bar laundry soap. It is reported, however, that as high as 5 per cent rosin in toilet soap has long been common practice in Europe and by certain American soapmakers. It is claimed by some soap makers that the presence of rosin in soap acts as both a perfume fixative and a stabilizer against rancidity, in addition to being a good soap ingredient.

In the United States, use of up to 30 per cent rosin in brown bar laundry soap is common practice. But apparent fear of darkening and other reasons have kept rosin out of chip and sprayed soaps which have become so popular in recent years. Such fears, however, appear to be unjustified. Recent research findings indicate that the paler grades of rosin may be used in flaked and sprayed soaps in amounts up to 10 to 15 per cent without causing any appreciable darkening in these soaps.

In bar soaps the presence of rosin causes darkening in direct ratio to the grade of rosin used and the relative amount present. When pale rosins are used and amounts added are relatively small (up to 5 per cent), little increase in color need occur. Where the pale rosins are used with brown fats and oils, color contributed by the rosin, in amounts up to as high as 15 to 20 per cent, is hardly noticeable.

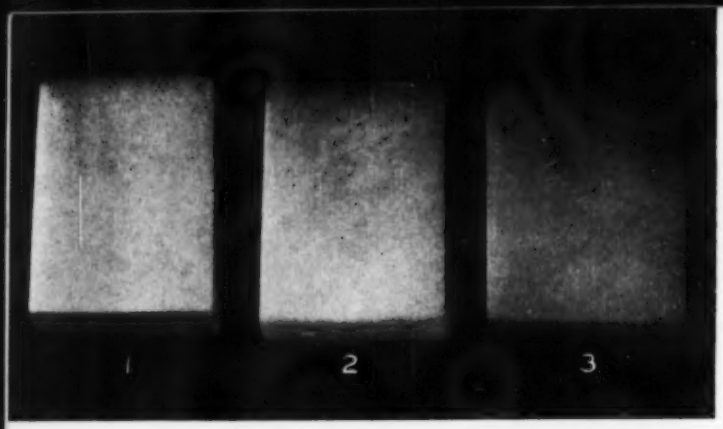


Fig. 1.—Relative amounts of color in (1) a white toilet soap; (2) a white soap base (75 per cent white tallow and 25 per cent coconut oil) with 5 per cent of hydrogenated rosin; (3) the same white soap base containing 5 per cent of N wood rosin soap.

Five spray-dried soaps all screened to the same mesh to show comparative colors. No. 1, a commercial spray-dried soap bought in a local store. No. 2, the same soap with 15 per cent added hydrogenated rosin soap. Nos. 3, 4, and 5, same as No. 2, but with 15 per cent each of WG wood rosin for No. 3, N wood rosin soap for No. 4, and WG gum rosin soap for No. 5. Colors of all the samples, except No. 4, substantially snow white; No. 4 had a slight yellow tint.

ANOTHER important factor today is the availability of improved rosins, such as hydrogenated and polymerized rosins, which exhibit improvements over the normal grades of rosin available in the past. A brief resumé of rosin chemistry at this point will be helpful in better visualizing the part which rosin and these improved rosins can play in helping to relieve the developing shortages of fats and oils normally used in soapmaking.

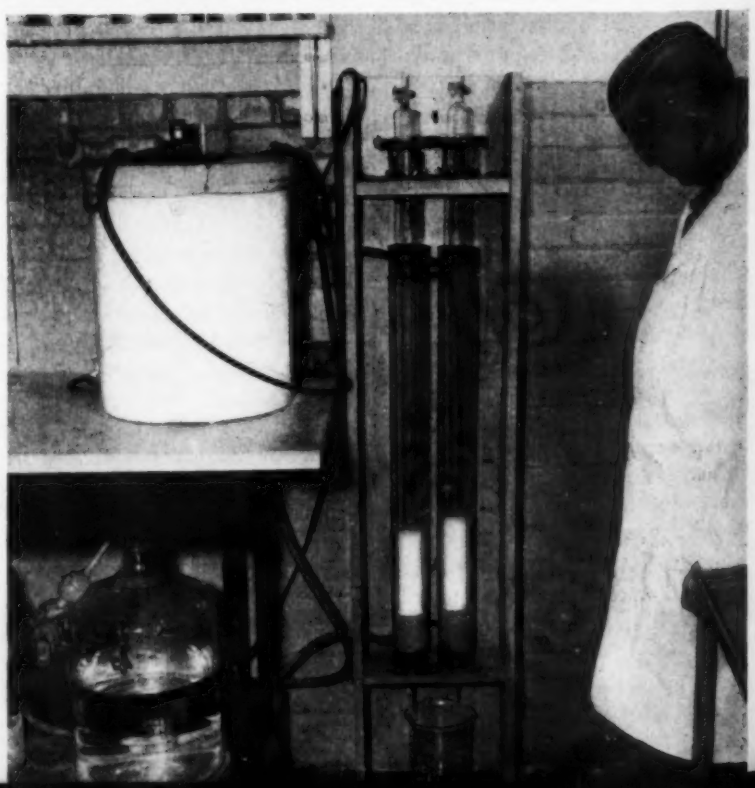
Rosin is composed of approximately 90 per cent rosin acids and 10 per cent esters, hydrocarbons, and other non-acid constituents. The acid portion is composed of abietic, l-pimaric, d-pimaric, and other rosin acids. All these acids are isomeric, monobasic, and have a molecular weight of 302.34 ($C_{20}H_{30}O_2$). The relative proportions of the different isomeric acids in any given sample of rosin vary with the source and past history of the sample. N wood rosin, for example, contains 35 to 40 per cent abietic acid, the molecular structure of which is shown.

Abietic acid is represented as having two double bonds which are subject to addition, isomerization, polymerization, and other chemical changes. The tendency of rosin to cause discoloration is associated with the reactivity of these double bonds. Better control over the reactivity of these double bonds is exercised through some of the newer rosin derivatives now available.

Staybelite* is the Hercules trade name of hydrogenated rosin now available to the soapmaker. The improved color stability which this product makes possible is illustrated in Figure 1, where the color of a sample of soap containing 5 per cent of this resin is compared to that of two other soaps, one without any rosin and one with 5 per cent N wood rosin.

* Reg. U. S. Pat. Off. by Hercules Powder Company.

Equipment for testing sudsing ability of soaps and stability of suds under standard conditions. Constant temperature bath on left.



Showing one of the glass knock-down soap kettles used in rosin soap research (kettle lifted out of heating jacket) for convenient observation of saponification, settling, and other action in the kettle. J. N. Borglin is directing rosin research for Hercules.

As with all other soap stock materials, rosin has both advantages and disadvantages. In the light of reported experience and recent findings from research, the following appears to be a fair listing of the more evident advantages and disadvantages of the use of rosin in soapmaking.

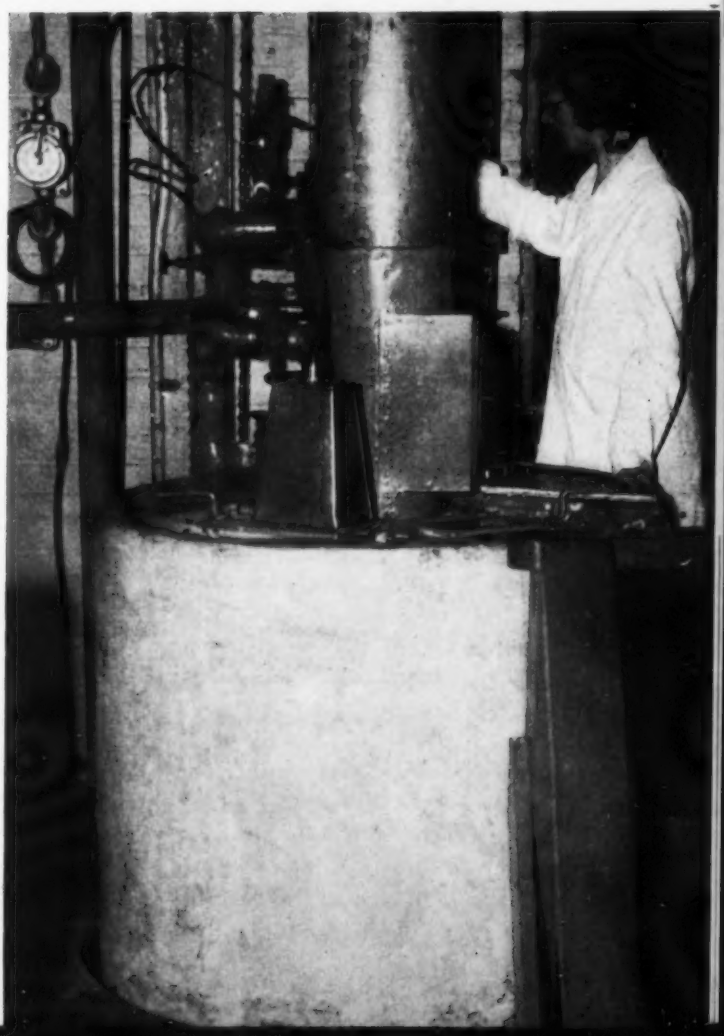
Advantages:

1. Low price.
2. Dependable availability in large volume.
3. Good detergent action.
4. Quick and lasting suds.
5. Good solubility of soap.
6. Can be used in bar, chipped, powdered, and liquid soaps.
7. Reduces dusting (and resulting sneezing) of powdered soap.
8. Color of spray-dried and chipped soaps containing up to 15 per cent rosin compare favorably with similar soaps made without rosin.

Disadvantages:

1. Tendency to cause darkening.
2. Lower titer.
3. Higher unsaponifiable.
4. No by-product glycerine.

Another improved resin made from rosin and of interest to the soapmaker is Poly-pale* resin, a polymerized rosin and which, like Staybelite, also has improved color stability. Although the color of polymerized rosin is not quite as good as that of hydrogenated rosin, the former is characterized by another improvement of interest to the soapmaker. The melting point of polymerized rosin is some 15 to 20° C. higher than those of gum and wood rosins, and thus enables the soapmaker to exercise easier control over the titer of his soap. The improvements in resistance to oxidation shown by these chemically processed resins, when compared to ordinary gum and wood rosins, are shown in Figure 2. From these curves one can visualize their improved ability to resist combination with oxygen. In Table III are tabulated specific data of interest in comparing these resins and rosins.



View of the top of the ten-foot experimental soap spray tower in which white soap powders containing 5 per cent of light rosin have been produced.

The cost of rosin in comparison with that of tallow is likely to remain low. As to availability, it is impossible to say today what the situation on rosin supply will be 12 months hence. But today there appears no evidence of a shortage. Column 2, Table II shows what the annual production has been running. It is probable that the 1943 production will be down to 750 million pounds (the smallest crop in 25 years) because of labor shortages. But ample stocks are available for soap. (See column 6, Table II.) It appears at present that if the soap industry in this country needs 200 million pounds more rosin to replace short fats, it will be available.

AN opinion sometimes expressed is that rosin has no detergency value when incorporated into soap, and serves the part of a filler only. This is not the case. Figure 3 illustrates the fact that detergency of a soap can actually be improved if the proper amount of a suitable rosin is correctly blended into the soap. According to the tests from which the data plotted in Figure 4 were obtained, addition of hydrogenated rosin, N wood, or H gum rosin up to 30 per cent had a tendency to improve detergency. Furthermore, sudsing activity and suds life have been found to be satisfactory when such soaps were used in both soft and hard water.

The effect of rosin addition on solubility of soap depends to some degree upon the fatty soap stock used. The general tendency is for the presence of rosin to increase solubility. But in no case in our research has solubility of the soap been found to be decreased by the presence of rosin in the soap.

No soapmaker should have any difficulty in using from 5 to 15 per cent of rosin in making light-colored bar soaps if the proper grade of rosin is chosen. Rosin is also being used successfully in the production of liquid soap wherein as high as 10 per cent of the fat stock is replaced by rosin, and the product is getting enthusiastic acceptance.

Rosins have been successfully used in producing satisfactory quality

(Turn to Page 69)

Table I

EXTENT OF ROSIN USE IN SOAP

Year	Total Fats Oils and Rosin † million lbs.	Total Fats and Oils † million lbs.	Total Rosin † million lbs.	% Rosin of Total Saponifiables column 4 / column 2 x 100
1921-22	1,086	991	95.4	8.8
1922-23	1,238	1,119	118.7	9.6
1923-24	1,316	1,196	120.3	9.2
1924-25	1,410	1,321	88.2	6.2
1925-26	1,533	1,415	118.1	7.7
1926-27	1,585	1,486	99.3	6.3
1927-28	1,710	1,626	84.2	4.9
1928-29	1,711	1,635	76.7	4.5
1929-30	1,785	1,689	96.0	5.4
1930-31	1,652	1,560	92.0	5.6
1931-32	1,643	1,542	100.7	6.1
1932-33	1,637	1,527	109.8	6.7
1933-34	1,567	1,456	111.0	7.1
1934-35	1,735	1,615	119.1	6.9
1935-36	1,621	1,504	117.1	6.6
1936-37	1,702	1,578	124.8	7.3
1937-38	1,773	1,659	114.6	5.9
1938-39	1,775	1,677	98.7	5.6
1939-40	1,908	1,810	98.7	5.2
1940-41	1,933	1,853	80.3	4.2
1941-42	2,416	2,310	105.5	4.4

† Agricultural Statistics, Table 512 (1941) and Table 277 (1942), with rosin figures corrected to equivalent of 420 pounds net per bbl. instead of 500.

Table II

ANNUAL ROSIN PRODUCTION AND DISPOSITION*

Crop Year **	Total Production million lbs.	Imports million lbs.	Domestic Consumption million lbs.	Exports million lbs.	Stocks at End of Year million lbs.
1921-22	723	—	386	281	498
1922-23	786	—	420	394	470
1923-24	900	0	470	485	415
1924-25	909	0	449	606	268
1925-26	879	8	520	450	184
1926-27	986	10	511	463	206
1927-28	1,075	1	460	570	253
1928-29	1,047	2	521	530	250
1929-30	1,119	1	551	566	253
1930-31	1,047	0	446	505	350
1931-32	943	0	399	465	430
1932-33	744	—	371	452	351
1933-34	953	2	422	498	387
1934-35	931	1	472	439	408
1935-36	945	1	530	500	324
1936-37	992	1	597	456	264
1937-38	1,063	—	483	429	414
1938-39	1,084	—	489	341	668
1939-40	952	1	570	405	651
1940-41	906	—	558	222	778
1941-42	909	—	—	—	597

* Statistics were compiled by Economic Research Division, Hercules Powder Company.
** Crop year starts April 1 and ends March 31 of following year.

Table III

	Color U. S. Standard	Analytical Constants Softening Point °C. Drop Method	Ring and Ball Method	Acid No.	Saponification No.
Hydrogenated rosin[1]	X	76	68	159	159
Polymerized rosin[2]	WG	100.5	93	150	163
N wood rosin	N	85	80	167	174
N gum rosin	N	84	77	164	167
H gum rosin	H	89	82	171	178

[1] Staybelite Resin. [2] Poly-pale Resin.

FLOATING SOAP PATENT SUIT

Lever Brothers lose first round in Patent action against P & G alleging infringement of Lever's Bodman Patent . . . Summary of decision by U. S. District Court

AFTER two years of litigation, the Baltimore Federal District Court decided last month that the introduction of "new Ivory" soap by Procter & Gamble Co., did not constitute infringement of the Bodman patent held by Lever Bros. Co., and under which its "Swan" soap is manufactured. Not only did the decision of Judge W. Calvin Chesnut acquit Procter & Gamble Co. of the charge of patent infringement, but it was also ruled that the Bodman patent is invalid. The decision is of course subject to an appeal which we understand will be taken by Lever Bros. Co.

The judge's decision apparently gave considerable weight to the technical testimony of Dr. Donald H. Andrews, head of the chemistry department of Johns Hopkins University, who appeared as a witness and testified that in his opinion "new Ivory" is a distinctly different product from the soap described in the Bodman patent, being distinctly softer than standard milled soaps, and lacking their characteristic firmness and texture. He testified further that although the Bodman patent claims for "Swan" the characteristics of resisting sliming and disintegration on use, tests made on "new Ivory" showed that the latter does readily slime.

Considerable emphasis was placed upon prior use by other American soap makers, including George A. Schmidt Co., Chicago, Andrew Jergens Co., Cincinnati, Cincinnati Soap Co., Cincinnati, and Colgate-Palmolive-Peet Co., Jersey City, of some of the principles covered by the Bodman patent. Also of considerable apparent importance in reaching the judge's decision was the fact that in their actual commercial production neither of the two companies involved in the court action use the equipment or exact process described in the Bodman patent. Fault was also found with the patent application in that its description of the process was vague and that the application did not describe the process in "such full, clear concise and exact terms as to enable any person skilled in the art to use the same."

The substance of the judge's decision, taken from his official opinion, was as follows:

"I do not find in the prior art or uses any clear anticipation of the real discovery that Bodman made with respect to the phase transition change in soap from intense agitation at sufficiently high temperatures. Apart from this, however, the prior art does show substantially all of the different steps of Bodman's process as outlined in the patent and embraced in the claims.

"To summarize, my conclusions are: (1) they do not particularly and distinctly claim the real discovery made by Bodman, (b) their wording is so general and in some respects so ambiguous, that they fail to comply with the statutory requirements of 35 USCA, S. 33; (2) if the claims can be considered valid at all, then, in view of the prior art, they must be strictly limited to their several and particular elements without the wide range of equivalents contended for by plaintiff's counsel; and as so limited the defendant's process and product does not infringe."

TO sketch in some of the background of the case, the original patent application was filed by John W. Bodman, director of the research department of Lever Bros. Co., back in 1933. The patent claims were once amended in 1936 and again in 1940. The patent (U. S. No. 2,215,539) was finally issued September 24, 1940, and assigned to Lever Bros. Co. The work is said to have traced originally from Bodman's efforts to develop a process by which a harder cake of Lever's best-seller, "Lifebuoy," could be produced. An experimental run which produced a floating type soap, and a product much whiter than expected, is said to have convinced the Lever researchers that a medium for their long anticipated entry into the white floating soap field had been discovered.

The judge concluded that the objective of the patent was to produce "a new type of soap which would bring together into one bar the desirable quality of framed soap in that it would float; but avoid the disadvantages of framed soaps in the tendency of large bars to warp, and would likewise have the good quality of milled soap with respect to its hardness, firmness and fine texture; but would be better than milled soaps in that (1) the new soap would float; (2) would lather sufficiently for reasonable use; (3) but would be better than milled soaps in that it would (a) more strongly resist water penetration; (b) would not so readily slime in use; (c) would not have specks in the soap bar and (d) would not swell nor tend to disintegrate by virtue of water penetration into the fissures, crevices or lami-

nations, incident to the mere agglomeration of pellets of soap into the completed bar of milled soap."

The process consists essentially of the following elements: (1) introducing a soap mass of 5 to 25 per cent moisture into a closed mixing chamber, working the mass in the presence of air, while heating at a temperature of from about 160° F. to about 225° F., to distribute air uniformly throughout the heated mass, maintaining sufficient pressure on the mass to retain the air therein, releasing the mass to cause it to solidify in a continuous and aerated state, thus producing a floating soap having a continuous aerated mass with a uniform dispersion of fine voids throughout, and characteristic texture and firmness similar to milled soaps, as well as shape-stability.

TURNING back once more to Judge Chesnut's decision, the following paragraphs appear significant.

"Bodman's only real discovery was that a new kind of soap could be produced by agitation of a soap mass at a temperature which would bring about a change in the phase of the soap . . . the patent treats 25 per cent as the critical moisture content which cannot be exceeded in the process . . . it rather appears that the moisture content is important only as correlated to the temperature at which the phase transition occurs, that is, the higher the moisture content, the lower the requisite temperature.

"The prior art does not clearly show . . . any literature, patents or uses of the particular discovery by Bodman, but it does show that there was no novelty in the method or process used by Bodman in making the discovery. Thus it was not new to intensely agitate a soap mass containing less than 25 per cent of moisture in a mixing chamber when open or closed, and to produce there, either milled or framed soap as a floating soap. Nor was it new to make a soap with minute air bubbles throughout; and of course, in the art of soap making there were many instances in which soap was heated to high temperatures.

"The well-known Dopp Crutcher was a machine equipped with an Archimedean screw and a jacketed chamber in which soap stocks were commonly intensely agitated and mixed at high temperatures. In operation it was quite like a Banbury mixer, except for the plunger and pressure."

The testimony reviewing claims of prior use in the United States of the principles covered by the Bodman Patent included the following: (a) the George A. Schmidt Company of Chicago made a framed floating soap by remelting and aerating a semi-boiled soap dried to about 20 per cent water content, which was air-crutched at temperatures in excess of 160° F. The stamped cakes made therefrom did not warp; (b) Andrew Jergens Company, Cincinnati, made a framed floating soap from a cold boiled soap containing less than 25 per cent water which was remelted together with soap scrap, and air-crutched, containing less than 25 per cent of water. The temperature required was in excess of 160° F. and there resulted a floating soap of less than 25 per cent water content; (c) Cincinnati Soap Company, Cincinnati, made a framed floating soap from a semi-boiled soap containing less than 25 per cent water which was air-crutched in a crutcher as soon as the soap was made at a temperature in excess of 160° F. and framed, producing a floating soap of less than 25 per cent water content. The testimony also cited a process used by Colgate & Company and later Colgate-Palmolive-Peet Company for making an aerated shaving stick.

"The granted claims do not distinctly claim Bodman's real discovery. The real discovery was that a soap mass agitated at sufficiently high temperature, that is a temperature above its critical point, assumes a different physical phase, which means a different arrangement or form or combination of its molecules or crystals. This temperature varies for the water content of the soap mass, and the new phase of the soap determines its particular quality or characteristics with respect to hardness or softness, its resistance to water penetration and its economical use. The specific critical temperature of the soap mass is, therefor, the all important thing in the process; but neither claim 5 nor 7 (of the Bodman patent. Ed.) particularly points this out as required by the statute.

"With respect to the product itself," said the decision, "there was no one thing that was clearly new, and not appearing in one or the other soaps long known and used; but the new feature aimed at in the patent was to bring together in a single bar of soap some of the advantages of both milled and framed soaps, eliminating some of their disadvantages."

A COMPLICATING feature in the case singled out for particular attention was that neither Procter & Gamble nor Lever Brothers in the commercial manufacture of their respective products use equipment at all mechanically similar to the Banbury mixer, described in the patent application. The Banbury mixer is a batch machine operated under static conditions. Both companies in their actual commercial production use different type machines for a continuous manufacturing process. Lever Brothers use a machine called a "Converter," while Procter & Gamble use a continuous machine called the "Votator."

The "Votator" was described in the judge's decision as consisting of a horizontal cylinder with an opening at one end into which the semi-liquid soap stock is pumped. The cylinder is equipped with an interior revolving drum approximately concentric with the cylinder itself, and largely filling the interior of the cylinder. To this revolving drum are attached long knives or scrapers, the cutting blades reaching very closely to the inside walls of the cylinder. The cylinder itself is jacketed throughout most of its length for the reception and circulation of brine which rapidly cools the inside walls of the cylinder. As the semi-liquid soap stock is pumped into one end of the cylinder, it quickly forms a thin film soap on the interior walls of the cylinder which is pared or scraped off by the revolving knives, and by the force of the pumping pressure. The particles of soap are continuously pressed forward throughout the length of the colling chamber, are mixed with each other, and emerge into a funnel-like compartment of the cylinder where

they are extruded through an orifice at the end of the cylinder of a shape and size desired for the formation into bars of soap. From there, the long extruded soap bar is carried forward on a conveyor belt and quickly cut by a moving device into the lengths desired for particular bars of completed soap; and then at a later stage of the continuous operation, they are appropriately pressed and stamped and wrapped ready for sale.

The semi-liquid soap stock enters the "Votator" at a temperature of about 220° F.; is there quickly cooled by the cooling cylinder walls to a temperature of about 134 degrees, but when further mixed in the tapered funnel-like portion of the "Votator," the temperature, by friction in mixing, is again further raised so that the extruded bar at the center of the mass has a temperature of about 150 to 155 degrees. The further process of cutting and stamping the bars is conducted so quickly that the soap mass is very rapidly cooled and differs in that respect from the ordinary run of framed soaps which cool only slowly. The whole processing of the soap in the "Votator" occupies only about 45 seconds as compared with an operation in the Banbury mixer of about 20 minutes or more. The output of the "Votator" is about 6,000 to 7,000 pounds per hour.

Lever Brothers' "Converter" is also a horizontal cylindrical machine jacketed for artificial heat and equipped with two powerful screws which agitate, grind and thoroughly mix the soap mass. The latter is entered at ordiary room temperature in the form of solid dried soap pellets with a moisture content of about 20 per cent. The artificial heat is supplied to render the soap mass plastic or semi-fluid and it is extruded from the cylinder at a temperature of about 185 degrees. It is then, by actions not stated in the Bodman patent, quickly cooled and cut into bars of the required length. The final product is a soap of the omega type; the bars are hard and firm to hand pressure like milled soap. It also seems to be a continuous mass, and the air bubbles in the final product are apparently small and well distributed. In the class of soaps, whether hard or soft, it is distinctly hard as compared with the defendant's new Ivory. In comparing the process in the "Converter," with that in the "Votator," the important difference is with respect to temperature. In the "Converter," this is apparently constant; while in the "Votator," it is variable. In the initial process, the soap introduced into the "Converter" is dry and solid and at room temperature; while in the "Votator" the soap is introduced in the form of neat or kettle soap which is said to be plastic or semi-liquid. The jacket of the "Converter" is used to supply artificial heat; while the jacket of the "Votator" supplies brine for quick cooling, the temperature of the soap on entering the "Votator" being about 222 degrees. The conditions as to the pressure and the alleged feature of a closed chamber seem to be about the same in the "Converter" and the "Votator."

Two other suits are now pending between the same two companies. One is a suit based on unfair competition brought by Procter & Gamble Co. against Lever Brothers, presumably with respect to the alleged resemblance of the new "Swan" soap in form an appearance to "old Ivory" soap, and the other, a suit for damages by Lever Brothers against Procter & Gamble presumably based on the obtaining of samples of "Swan." The complaint also alleges that Procter & Gamble Co. illegally obtained information on Lever's production figures and advertising plans.

Procter & Gamble were represented in the case by the law firm of Allen & Allen, Cincinnati, and by Cooper, Kerr & Dunham, New York. Attorneys for Lever Bros. Co. were Pennie, Davis, Marvin and Edmonds, and Hoguet, Neary & Campbell of New York.

Soap Division Under Davis

The Soap and Glycerine Division, Fats and Oils Branch of FDA, is specifically included in the new Administration of Food Production and Distribution, recently set up by presidential order with Chester C. Davis as its head.

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Clarify Glycerine Position

Contrary to reports that have been published regarding the complete curtailment of the use of glycerine in products of "lesser essentiality," the Food Distribution Administration of the U. S. Department of Agriculture pointed out recently that the exact situation has been somewhat misunderstood. The FDA mailed an announcement to users of glycerine on March 1, advising that no glycerine allocations would be made for the month of April on a series of products for civilian consumption. This letter did not prohibit the use of glycerine in these products ("cosmetics, dentifrices, lotions, beverages, flavors, candy and all edible products except margarine, gum, shaving cream, tablet and pad adhesives, tobacco, emulsifiers for shortening, beverage crown caps, protective coatings for civilian uses, soaps and shampoos and hair tonic") but only stated that no allocation would be made. It is still possible for the small user to obtain his requirements under the "Small Order Clause," paragraph "c" of the Food Distribution Order No. 34.

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Edible Oils in U.S.P. Soap

A number of inquiries have been made by soap makers recently as to the exact status of soap makers in use of edible oils as ingredients in U.S.P. Hard Soap. We are advised unofficially by a high authority in Washington that such use of edible oils is not restricted by M-71. However, the 84 per cent quota restriction does apply on such use.

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No Soap Rationing Planned

The OPA has just made an official statement that no plans for any possible soap rationing are currently under consideration. This statement was made to put an end to recurring rumors in the press that such action might be contemplated.

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To Sell Draper Soap

James A. Kilcommons of Kilcommons Chemicals Corp., Providence, R. I., has just been named sole selling agent for the J. O. Draper Co., Pawtucket, R. I., manufacturers of industrial and textile soaps.

WHAT SOAP OUTPUT?

Discussion of American soap production in 1942 and speculation on 1943 production

HOW much of each of various types of soap products was manufactured in the United States in 1942? What is the outlook for production from now until the end of the year and for the whole of 1943? The answer to these questions must at best be a rather loose estimate based on odds and ends of such limited information as is available. Whether the figures should be dignified with the label of "estimate" or must be put down purely as a guess depends upon the purpose for which they might be used. Inasmuch as soap manufacturers do not make public their production figures, any analysis of soap output must be based on estimates derived from other data such as fat and oil consumption, glycerine production, and certain government statistics. To guess how much and what kinds of soap were produced last year might lead to speculation of some value in regard to current output and the outlook for the balance of 1943.

As a starting point for "estimating," a figure of 3,800,000,000 pounds for all soap products will be taken as the American production for 1942. Although some soapers believe that this is too high, it is under the figure talked about unofficially in and around Washington a few weeks ago. Estimates of some 2,100,000,000 lbs. of fats, oils, fatty acids, rosin, tallol, etc. used in soap (Census figures, just issued, show a total of 1,875,000,000 lbs. of oils and fats alone consumed by the soap industry) appear to substantiate the soap total. The difference of 1,700,000,000 pounds would be natural increase on saponification, added builders, fillers, and an average moisture content of possibly 20 per cent—and average of 55 per cent fatty acids.

Recent per capita soap consumption has been estimated at about 27 pounds, starting with the years of 1940 and 1941 when industrial activity began to show a marked increase. Against this figure of 27 pounds *consumption*, a total production of 3,800,000,000 pounds of soap products gives a *production* of 29 pounds per capita in 1942. It seems logical to believe that with WPB pressure to produce every possible pound of glycerine in 1942, soap production might have been pushed up at least two pounds over the domestic consumption rate. Then, some soap was exported too. But in view of feverish industrial activity in 1942, it is also logical to believe that soap demand, for industrial as well as household purposes, continued at a rate equal to 1941 or greater, and induced a continuation of production at high levels.

An examination of the glycerine production figures for 1942 shows 221,760,000 pounds on a basis of 80 per cent crude. This in terms of 100 per cent glycerol gives 177,410,000 pounds. In the light of the types and qualities of oils and fats saponified in 1942 as compared with preceding years, the total available glycerine in the fat in 1942 averaged lower, probably under 9 per cent, as against a figure of 10.5 to 11 for 1941 and before. Far less coconut oil and more oils of lower glycerol content were used last year, not to mention generally lower fat quality of higher free fatty acid content. Of the 9 per cent available glycerol, probably 8 per cent or slightly under this was recovered and refined. On this basis, over 2,000,000,000 pounds of fat were saponified or split to obtain 221,760,000 pounds of 80 per cent crude. The soap kettle took most of the fatty acids produced. Consider also, the fats and oils used in making cold and semi-boiled soaps prior to glycerine restrictions in 1942, and an over-all total of 2,100,000,000 lbs. of fat, rosin, etc. appears conservative.

EARLY this year, it was estimated by authorities in Washington that total American soap production for 1943 would approximate 98 per cent of 1942. But of this, the demand for the armed forces, lend-lease and other government departments would reduce soap products available for civilian use by about 13 per cent. This means that total production would have to be slightly over 3,700,000,000 pounds in 1943, but of this, 500,000,000 pounds would go for war purposes, mostly export. But to produce this amount of soap, earlier estimates indicated that there would be a shortage of about 300,000,000 pounds of fats and oils growing out of restrictions on the use of edible oils in the soap kettle.

To make up at least for a part of this deficit of some 300,000,000 pounds of soap fats, the enforced substitution for fats and oils of a definite percentage of rosin, builders and fillers has been under consideration by the Soap and Glycerine Unit in Washington for the past two months. In this way, officials have hoped to boost the

total of finished soap products by a rough figure of 200,000,000 pounds, giving 5 to 6 per cent more soap for each pound of fat used. Opinion has been expressed both in and out of the soap industry that the larger use of rosin and alkalies this year is a foregone conclusion irrespective of government order. In short, soap manufacturers will very probably in certain types of products use voluntarily even a higher percentage of substitute materials than proposed mandatory figures mentioned in Washington.

In spite of the Washington estimate that the visible supply of fats and oils for soap this year is 300,000,000 pounds short of full needs,—military, lend-lease and civilian,—there are several circumstances which may alter this picture as far as total soap production is concerned. That from present figures, soap fats are short by this amount, there seems to be every evidence, but there are hopes that through the efforts of the Soap and Glycerine Unit, all or any part of 100,000,000 pounds of grease and tallow may get to the American market from the Argentine. There are hopes also that the new campaign to increase collections of household and restaurant waste greases may double the rate over the balance of 1943, and that an additional 35 to 40 million pounds over and above the rate of last year may be forthcoming between now and next January 1.

If 100 to 135 million pounds of the 300,000,000 pound deficit of soap kettle fats can be made up by additional fats, this would be extremely encouraging from the point of view of glycerine and might help to avoid an anticipated drop of 10 or 12 per cent in glycerine production this year compared to 1942. Non-fat soap raw materials are available to make up the balance of the anticipated fat deficit, or 100 per cent of the deficit if needed. An ample tonnage of rosin and processed rosins is reported on hand to take care of all needs of the soap industry. Whereas over recent years, rosin use in the soap kettle has hung around 100,000,000 pounds yearly, it would not be surprising to see it go over 250,000,000 pounds this year. In addition to rosins, increasing quantities of tallol have been finding their way into soap products over the past year. Estimates by producers indicate that tallol is now being used at the rate of 50,000,000 pounds yearly in soap, and that by the end of the current year, the rate of consumption will be close to 100,000,000 pounds. Manufacturers of soap powders, certain spray products, laundry soaps, scrub soaps, textile soaps, and specialties, where they have found it practically impossible over the past two months to buy cottonseed soap stock or foots, or other foots and certain fatty acids, are turning to the increased use of rosin and tallol in growing numbers. Though supplies of soap stocks and foots appear to be rather tight, stocks of rosin and tallol are in free supply.

That total American soap production in 1943 might exceed the 98 per cent estimate of the Soap and Glycerine Unit is possible. And this could be accomplished while staying within the 84 per cent fat and oil quota limit and with reduced fatty acid quotas. A summary of total soap making materials, — and this does not include larger percentages of silicates and other alkaline salts which will undoubtedly be used this year,— would indicate that the following quantities of materials will be available in 1943 to make up in whole or in part an expected shortage of 300,000,000 lbs. of oils and fats this year: (1) 100,000,000 pounds of recovered and imported grease and fats; (2) 250,000,000 pounds of rosins, including special light processed grades for soap; (3) 50,000,000 pounds of tallol suitable for soap. Although this 300,000,000 pounds of *additional* rosin and tallol would be of no interest from the glycerine angle, it would mean nevertheless that soap output could be extended by this amount if needed. All told,—if the 100,000,000 pounds of additional fat (this is the 135-140 million figure above cut to allow for possible over-estimate) actually become available, plus known availability of 300,000,000 pounds of rosin and tallol, plus a heavier tonnage of silicates, soda ash, and other alkaline salts, over-all soap production this year could be considerably larger than earlier estimates.

The key to the situation would seem to be the attitude of the OPA in enforcing Commodity Practices Regulation No. 1, its order covering size and quality of bar and package soaps and cleansers. Up to this point the position of the OPA has been that it will not call for price reductions when soap formulas are changed, provided the same anhydrous soap content is retained. Thus there is nothing in the OPA attitude to prevent wider practical use of rosin and tallol. Alkaline salts, however, give no anhydrous soap content, and their extended use in bar and package soaps might encounter pricing trouble with OPA unless there is a change in their previously announced policy.

1942 ESTIMATED SOAP PRODUCTION

	Pounds
Toilet soaps	560,000,000
Shaving soaps	20,000,000
Hand soaps, pastes, powders, etc.	25,000,000
Sprayed soap products (Granulated, sprayed powders, etc.)	1,140,000,000
Laundry bar soaps (White .....560,000,000 lbs.) (Yellow .....500,000,000 lbs.)	1,060,000,000
Chips and flakes	490,000,000
Washing powders, cleansers, etc.	270,000,000
Soft potash, liquid soaps, shampoos, etc.	120,000,000
Textile soaps and specialties	90,000,000
Miscellaneous	25,000,000
	3,800,000,000

ABRASIVE CLEANERS...

With steel wool off the market, demand shifts to other scouring products for use on pots and pans

ABRASIVE cleaners on the American market in recent years have been of comparatively few types but of many brands. Ordinary scouring powder with a feldspar base has undoubtedly found the widest use over a long period, as a household abrasive cleaner. Steel wool has found an increasing demand in recent years, particularly for heavy-duty scouring. A few cake scouring products combining soap, alkali, and feldspar, silica, or pumice still find a market, but have not been a large factor for some years as household items. The "holy stone" type of scouring brick is still reported to find use on board ship. Some paste products containing feldspar, pumice or silica have been noted from time to time, but they have been few and sales have been small.

With the war-time elimination of steel wool from the market as a household scouring agent, the demand formerly enjoyed by these steel wool-soap cleaner combinations has been forced to turn to other products, mostly ordinary abrasive scouring powders. Because steel wool is not made from scrap as has been commonly believed, but has consumed an appreciable amount of metal suitable for war purposes, according to WPB, the well-known steel wool scouring products are no longer available and will probably be off the market for the duration of the war. Whether in the form of soap-impregnated steel wool pads, or separate pads or chunks of steel wool packed in combination with a cake of special soap, their places are of necessity being taken by other household scouring agents.

The steel wool and soap combinations were used chiefly in home and restaurant for heavy duty scouring of pots and pans, and other cleaning jobs where a strong abrasive action has been needed. Because of the strong cutting action of the steel wool, their main use has been confined to scouring metals. For this purpose, steel wool also has enjoyed a wide industrial application. To find products suitable as substitutes for the effective scouring action of steel wool, both old and some new items are being tried, — ordinary kitchen scouring powders, new types of scouring powders, and a variety of abrasive pastes.

Regular scouring powders so far appear to have taken over the major part of the market left vacant by the ban on steel wool products. In fact, these powders have for years been the only type of abrasive cleaner used by many housewives for scouring pots, pans, and other metal items, as well as porcelain and enamel. But on the whole, if they are sufficiently strong in abrasive action to scour metal pots, they are too harsh for use on porcelain, paint, etc. The products of milder abrasive action, offered only for use on enameled and porcelain surfaces by their makers, generally are inefficient for scouring badly stained or burned cooking utensils, rusted articles, and similar metalware.

A check-up among consumers as to how regular scouring powders work out in place of steel wool and soap, finds opinion divided, some finding full satisfaction in the stronger abrasive powders and others holding that nothing yet which they have tried does the job quite as easily or completely as steel wool. But, it would seem that most users who are cut off from steel wool-soap products,—a considerable proportion were found who never used these products anyway and consequently do not miss them today,—have turned to the use of scouring powders. Others have discovered new products designed especially to take the place of steel wool and some have turned old products to new uses as a replacement, — the latter particularly being the use of ordinary paste mechanics' hand soap for metal scouring and rough polishing.

The use of mechanics' hand paste for scouring pots is not new, these products having been converted to this purpose in times gone by in camps, on boats, by miners, and in household kitchens. Where the product contained a rough abrasive such as sand or coarse feldspar or marble chips and not too high a percentage of water, it has apparently worked out with a degree of rough and ready satisfaction, but with scratching and much wear and tear on the article cleaned. That a considerable number of household paste scouring agents modeled after a refined version of hand soap have not come on the market in the past is perhaps surprising.

SOME new products evidently borne of war conditions and aimed to replace the steel wool combinations have been noted of late. These are pastes packed in wide-mouth glass jars. The paste is firmer than the average hand soap, meaning that the content of abrasive and anhydrous soap is higher, and moisture lower. Examination indicates that anhydrous soap content varies from 15 to 20 per cent and that the abrasive which is a fairly coarse grade of pumice runs from 35 to 45 per cent, mostly closer to the higher figure.

Silicate of soda is present up to 5 per cent. The average water content is around 30 per cent which means that the products are practically the equivalent of solid soap packed in glass jars. In some cases, the soap is a potash base, but others show the ordinary soda soap jell which forms the base of most paste hand soaps. They are designed to be used by rubbing a wet cloth over the surface of the cleaner and then scouring the pot after the fashion of silver and other paste metal polishes.

Based on a study of a few products, an approximate specification formula was estimated to be within the range of the following figures:

	Min.	*Max.*
Soap chips, dry	12	20
Coarse pumice	30	50
Silicate	2	5
Glycerine or substitute	1	5
Water	25	40

An average composition for one of these scouring pastes would be about 18 per cent soap chips, preferably the yellow type, which would approximate 15 per cent anhydrous soap; 40 per cent ground pumice, preferably a coarse but uniform grade; 3 per cent commerical 40 degree sodium silicate; 35 per cent or thereabouts of water; 2 per cent glycerine. But with glycerine unavailable for any except essential war uses, an equivalent amount of some substitute would have to be used. Any addition to prevent hardening of the cleaner in the jar due to loss of water by evaporation is suitable. Bentonite has long been used as a substitute for glycerine to prevent the product from drying out. A small percentage of potassium chloride or ordinary salt will also help in this respect. The glycols are as scarce as glycerine. Dextrose has some limited value as a glycerine substitute,—and there are also numerous proprietary glycerine substitutes on the market.

The problem of drying out might also be attacked from the angle of the soap composition. It has been suggested that the substitution of a quarter to one-half of the soap chips by the equivalent of soft potash soap would help to keep the cleaner mass softer for a longer period. Rosin soaps because of their naturally soft character could aid in avoiding the frequent brick-like hardness which hand paste soaps often attain. Replacement of 20 per cent of the soap chips with a potash rosin soap has possibilities, or use of a mixture of half chips and half rosin soda soap in making the soap jell might have some value.

Because the paste abrasive cleaners are similar in many respects to mechanics' hand soap, the wide variation in formulas of a few of the best-known hand soaps may indicate to some extent the variations in composition which are possible in these pot scouring

(*Turn to Page 63*)

New Products

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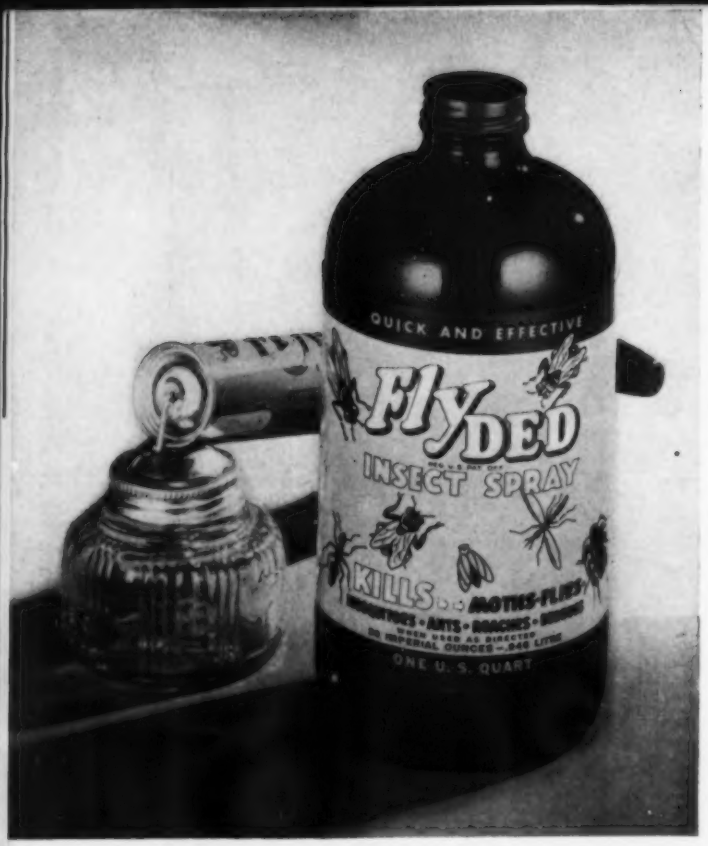


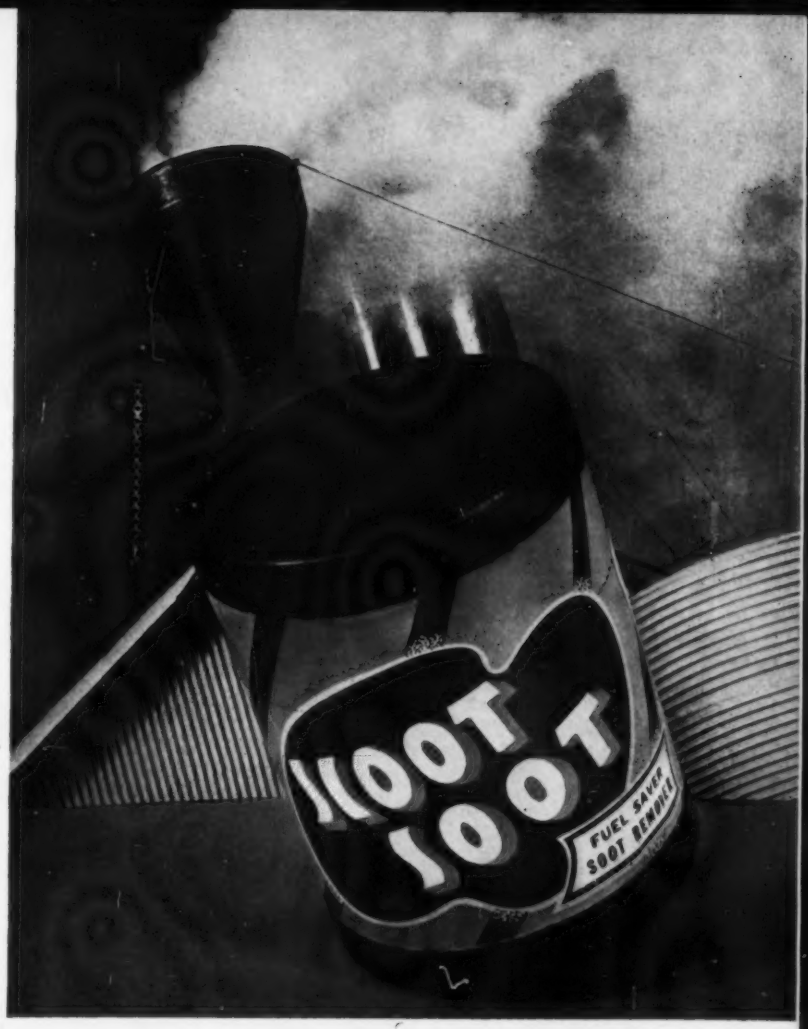
An old product in a new package is the story behind "Fly Ded," liquid insecticide distributed by Midway Chemical Co., Jersey City, N. J. "Fly Ded" now comes in a Duraglas amber Boston round bottle, by Owens-Illinois Glass Co., Toledo, O. The old familiar label appears on the new container.

Cenol Co., Chicago, is using this attractive new display material in the promotion of its year-old product "Clean-Up," an all-purpose shampoo type household cleaner. The display material is available to dealers purchasing one-dozen lots. See story pg. 43.

Lustrous amber bottles have been selected by Derris, Inc., New York, to replace metal cans in packaging "Tick" rubless wax. Bottles by Anchor-Hocking Glass Corp., Lancaster, O., feature: Easy, dripless pouring; transparency, to warn user when supply is low; and the need for reduced shelf space.

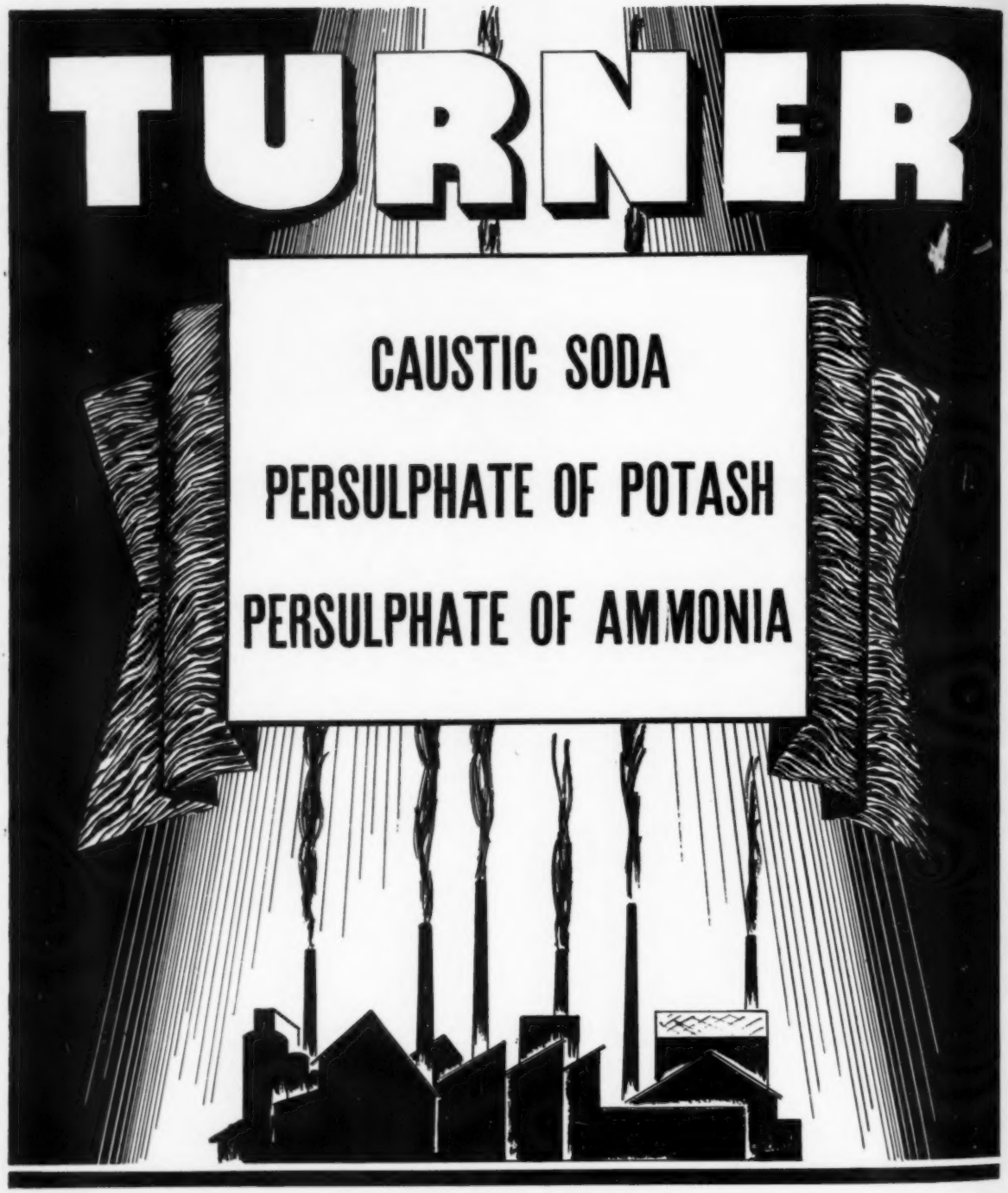
and Packages

And still another example of how the change from pre-war to war-time packaging has been made with a minimum of difficulty and maximum results is that of "Old English No Rubbing Wax," distributed by A. S. Boyle Co., Jersey City, N. J. Duraglas amber Boston round bottles of Owens-Illinois Glass, Toledo, made the shift possible.



A new package for an old product with a new war-time formula is "Scoot Soot," chimney cleaner, made by Fuld Brothers, Baltimore, Md. The new "telescopic" package is claimed to insure tight closing, preserving the strength of the contents.

Old (left) and new containers for Bowes Seal Fast Solvent and Cleaner. New containers are 4 oz. and 8 oz. non-critical amber bottles, former metal package an 8 oz. container. Wrap around label duplicates lithographed can label. The new glass containers are by Anchor Hocking Glass Corporation.



JOSEPH TURNER & COMPANY

RIDGEFIELD, NEW JERSEY

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NEWS

Nelson New Bon Ami V.-P.

James A. Nelson, formerly general sales manager, was recently appointed a vice-president for Bon Ami Co., scouring powder makers, New York. Mr. Nelson has been with the company for 22 years.

McCutcheon Joins E. F. Drew

J. W. McCutcheon, formerly associated for some years with Lever Brothers, Ltd., Toronto, and the Lightfoot Schultz Co., Hoboken, N. J., and for the past year with the British Purchasing Commission in Washington, D. C., has joined the technical staff of E. F. Drew & Co., Boonton, N. J., fatty acid and glycerine manufacturers. Mr. McCutcheon, formerly head of Lever glycerine operations in Canada, is in charge of glycerine production and refining for Drew.

Roche Lever Radio Head

M. J. Roche has been appointed manager of radio for Lever Brothers, Cambridge, Mass. He will be general coordinator of all Lever radio activities, with special reference to time buying and the development of new shows. His headquarters will be in Cambridge. Lever Brothers are one of the largest users of radio, investing over $5,000,000 for time alone last year.

Renew Fats Salvage Advertising

The new advertising campaign behind the fats salvage program broke in 618 newspapers in 369 cities late last month, in a renewed drive which will continue through the middle of July. Weekly insertions will reach over 36 million newspaper readers. In addition to supporting this program, the soap industry will contribute free radio promotion of the fats salvage drive, with an average of five programs per month for each radio home.

Soap Men Aid Prosperity Plan

S. Bayard Colgate, chairman of the board of Colgate-Palmolive-Peet Co., Jersey City, N. J., and E. A. Olds,

S. BAYARD COLGATE

Jr., president, Packers Tar Soap, Inc., Mystic, Conn., headed the committee responsible for the recent issuance of the comprehensive report of the National Association of Manufacturers outlining the principles necessary for post-war prosperity.

Soap Minor Dermatitis Cause

An Office of War Information publicity release, just issued, dealing with a "detective force" of six dermatologists and one chemist who are investigating causes of dermatoses, reveals only one of many cases enumerated where soap was in any way responsible. In that instance, the men from the U. S. Public Health Service found that a harsh work soap containing solvents like gasoline and kerosene was causing the trouble. The Dermatoses Investigation Section, known as DI, was organized in 1928, under the direction of Dr. Louis Schwartz, medical director of Public Health Service.

Marshal Mundheim a Captain

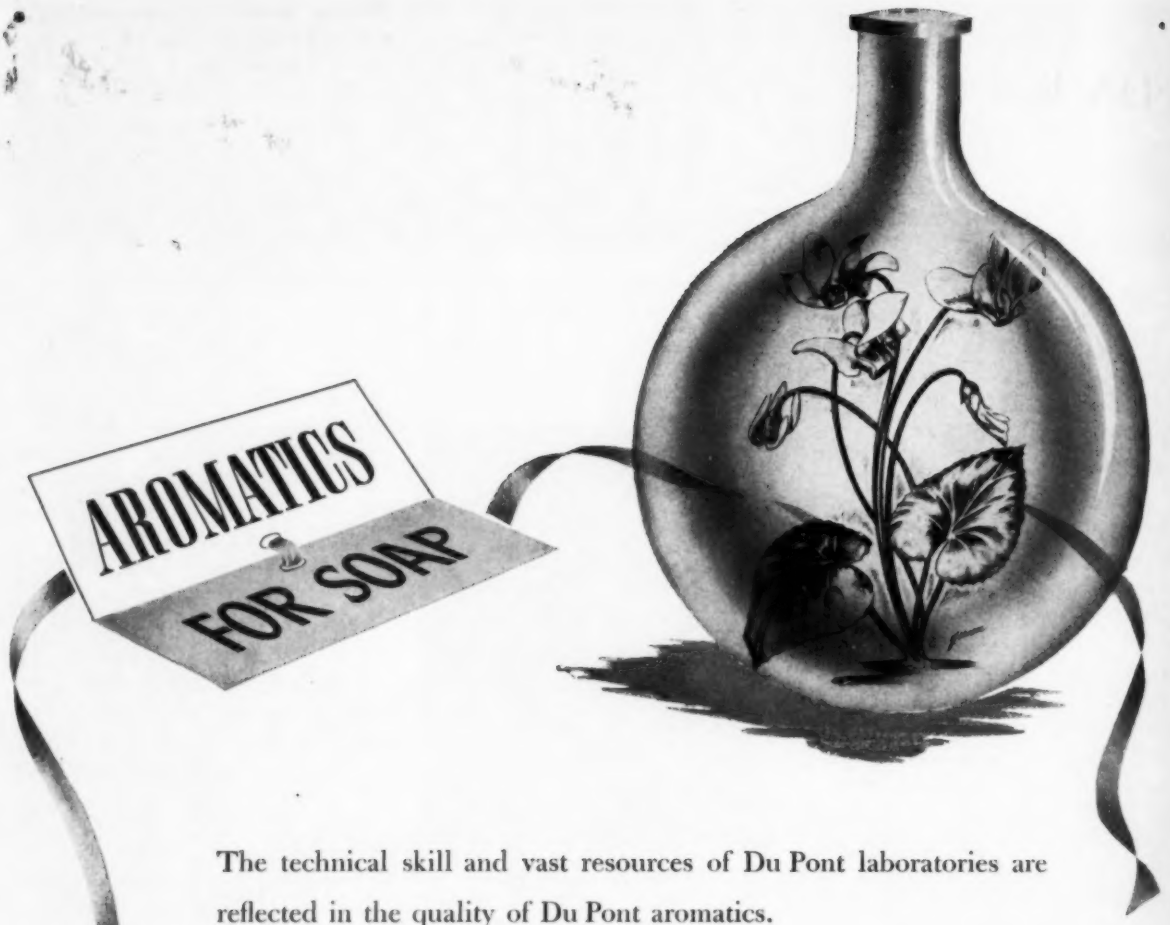
Marshall Mundheim, former head of Lightfoot Schultz Co., New York, and more recently commissioned a First Lieutenant in the Army Air Corps, has just been made a Captain. Captain Mundheim is attached to the Procurement Division, 12th Towing Target Squadron, Army Airdrome, Santa Rosa, Cal. His wife and two children live in San Francisco.

No Soap, Towels, Etc.—Epidemic

The startling indictment by Archie O. Dawson, Moreland Act Commissioner, investigating conditions responsible for the spread of an epidemic of amoebic dysentary at Creedmore State Hospital (for mental defectives), Queens Village, N. Y., points up the argument against reducing soap and sanitary supplies, especially in wartime. Mr. Dawson found that: ". . . there has been no proper supervision of the cleanliness or the personal habits of patients working in the kitchens; that the lavatories used by patients working in the kitchen are not furnished with soap, towels or even toilet paper; that these lavatories are in a filthy condition, and when cleaned are cleaned by the same persons handling food in the kitchens."

Canadian '41 Soap Report

Soap, washing compounds or cleaning preparations were made by 116 factories in Canada in 1941, according to a report just issued by the Dominion Bureau of Statistics. Production from these plants was valued at $25,713,565, or 23 per cent more than the output of $20,855,880 of 110 factories in 1940. Employees numbered 3,080 compared with 2,649 in 1940, salaries and wages amounted to $4,599,816 against $3,585,884 and capital employed was $19,655,049 as against $16,293,861 the previous year.

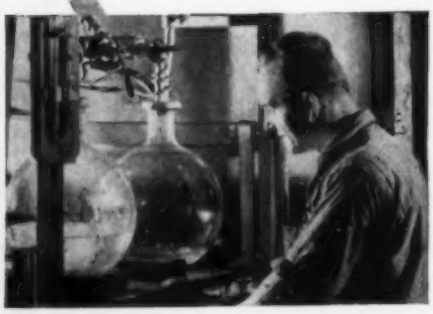


The technical skill and vast resources of Du Pont laboratories are reflected in the quality of Du Pont aromatics.

You can depend on their uniformity, purity and maximum odor value in the production of soaps, disinfectants and similar products.

PARTIAL LIST OF DU PONT AROMATICS FOR SOAP MANUFACTURERS

Alcohol C-8
Alcohol C-10
Alcohol C-12
Alpine Violet (Cyclamen Aldehyde)
Amyl Salicylate
Anisic Alcohol
Anisyl Acetate
Aubepine Liquid (Anisic Andehyde)
Benzyl Acetate
Benzyl Alcohol
Benzyl Benzoate
Bergamot Artificial
Camphene
Cedrol
Cinnamic Aldehyde
Citronellol Extra
Coumarin
Dimethyl Anthranilate
Dimethyl Hydroquinone
Dipentine
Geraniol
Geranium Artificial
Geranyl Acetate
Hyacylene P and S (Dimethyl Acetal of Phenyl Acetaldehyde)
Indole
Iso Amyl Benzyl Ether
Isoborneol
Isobornyl Acetate
Isopulegol Acetate
Isopulegol
Methyl Anthranilate
Methyl Naphthyl Ketone
Methyl Rhodione
Mugol (Dimethyl Acetal of Hydroxycitronellal)
Musk Xylol
Para Cresol Methyl Ether
Rhodione
Skatole
Terpineol
Terpinolene
Terpinyl Acetate
Terpinyl Propionate
Violet Ketone



DU PONT

Aromatics

E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Department, Wilmington, Delaware. In New York, 40 Worth Street; in Chicago, 7 South Dearborn Street.

FDA Issues New Orders on Soaps, Oils, Fats, Glycerine

A SERIES of important new orders covering use by the soapmaker of various oils and fats, together with new requirements on glycerine recovery, allocation and use, were issued by the Food Distribution Administration, March 19, to take effect March 24. They supersede similar WPB orders which have been in effect for some months past. Of perhaps greatest importance to soap makers is the new order on glycerine recovery (FDO-33) which supersedes WPB Order M-193.

The most important change in the new order is that the average amount of glycerol (both free and combined) that may be left in finished soap may now not exceed 8/10 of 1 per cent. The calculation is to be made on the anhydrous soap basis of that portion of the soap derived from fats and oils, but exclusive of the portion made from rosin, commercial fatty acids, vegetable oil foots, and tall oil. Not less than 92 per cent of the glycerol content of the spent lye shall be recovered as crude glycerine (100 per cent glycerol basis).

Exemptions are granted to soap makers consuming less than 10,000 pounds of fats and oils or fatty acids in any single month; to manufacturers of soft soap, hospital grade (U. S. Army Spec. No. 4-1027A) for delivery to the U. S. Army; to soap makers using as raw materials commercial fatty acids, or raw or acidulated domestic vegetable oil foots; and to persons specifically authorized by the Director of Food Distribution, who are recovering the maximum amount of glycerine permitted by their facilities.

The new order covering glycerine allocation and use is FDO-34, replacing WPB Order M-58. Contrary to early inaccurate newspaper reports which indicated that the new order would completely eliminate glycerine use for civilian purposes, allowance is still made for delivery and use of 50 pounds per month by any consumer without restriction. More than 50 pounds, but not more than 1,150 pounds may be delivered to and used by consumers, provided that the quantity delivered does not exceed 70 per cent of the average 1940 rate of consumption. Hospitals, laboratories, etc., incidentally, are exempt from this restriction. Quantities exceeding 1,150 pounds monthly are subject to allocation by the Director of Food Distribution. The confusion attaching to this new order in early newspaper accounts seems to be traceable to another report which was released at approximately the same time, indicating that the Director would in all probability make no further allocations of glycerine for use in cosmetics, toilet preparations, tobacco, and other items of this general type.

A new order (FDO-38) covering palm oil supersedes WPB M-59. Similar new orders have also been issued on castor oil (FDO-32), oiticica oil (FDO-31), rapeseed oil (FDO-35), cashew nut shell oil (FDO-36), sperm oil (FDO-37), and tung oil (FDO-39). It would seem logical that a "take over" order will also be issued shortly by the FDA covering coconut and palm kernel oils, replacing WPB Order No. M-60, and a new order fixing fat quotas for soap and other products to take the place of WPB Order No. M-71.

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Hold Midwest Hotel Show

Suppliers of sanitary chemicals for the hotel trade were not represented at the Midwest Hotel Show in Chicago, March 23 to 25, their absence, with that of many other customary exhibitors, being attributed to war time conditions. Hild Floor Machine Co., Chicago, displayed their line of floor and upholstery equipment and shampoo cleaning materials, with Fred C. Hild, president and Fred Lyons, sales manager, in charge. The Fats and Grease unit of WPB's general salvage section, also participated with a booth drawing attention to their campaign for collecting waste kitchen fats and greases from domestic and institutional kitchens. Mrs. Walter J. Kelly, director of the drive in Chicago and the inspiration for the nation wide campaign which this project has become, was in personal charge at the booth, assisted by Mrs. George L. Secord.

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Belknap Heads Monsanto

Charles Belknap, chairman of the executive committee and executive vice-president of Monsanto Chemical Co., St. Louis, was elected president of the company March 23. Edgar Monsanto Queeny, for the last 15 years president, was elected chairman of the board, a position vacant since the death of his father, John Francis Queeny, founder and first president of the company in 1933. No executive vice-president was elected to succeed Mr. Belknap. In addition to his duties as president, he will continue as chairman of the executive committee. As chairman of the board, of which he has been presiding officer since 1933, Mr. Queeny will continue to devote all of his business effort in behalf of Monsanto.

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Booklet Evaluates Detergents

An article on the subject, "Evaluation of Detergents" which appeared in the February issue of *Soap & Sanitary Chemicals*, page 61, should properly have credited E. F. Houghton & Co., Philadelphia, manufacturers of textile processing materials, as the original source of the material reproduced. Our abstract was condensed from a previous article in the *Textile Colorist*, but the original source was the Houghton booklet. Copies of the booklet are available through D. C. Miner, E. F. Houghton Co., 303 West Lehigh Avenue, Philadelphia.

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C-P-P Wins Package Award

Colgate - Palmolive - Peet Co., Jersey City, N. J., were one of the winners in the 1942 All-America Package Competition for their paper tooth powder container. F. N. Burt Co., New York, container supply house, received a special award for package development work in paper compacts, lipstick containers, tooth powder cans.

Hercules Rosin Soap Research

To demonstrate the suitability of wood rosins, including hydrogenated and polymerized rosins, as raw materials in soap manufacture and as a practical means of increasing soap production in the face of growing fat and oil shortages, Hercules Powder Co., Wilmington, Del., entertained a group of editors of the technical and trade press at its experimental station and research laboratories at Hercules, Del., on March 12. The editors spent the day viewing the technique and results of the extensive research on rosin and pine oil. An experimental kettle of soap was boiled and settled, and a run of a high-rosin soap was shown in the Hercules soap spray tower. The production of white granulated free-flowing soaps of high detergency containing 15 per cent of rosin was demonstrated,—as were various toilet soaps and other laundry soaps.

The group meeting of editors was conducted by Paul Mayfield, sales director of the Naval Stores Division of Hercules. Albert E. Foster, general manager of the division, and Dr. Emil Ott, Hercules research director, spoke on new rosin developments and the outlook. C. A. Higgins, president of Hercules Powder, attended the informal luncheon of the group. The tour of the research laboratories was conducted by J. N. Borglin, research director for the Naval Stores Division.

In outlining the outlook for rosin consumption in soap manufacture, Mr. Mayfield predicted that the present figure of something over 100 million pounds would probably be tripled this year and that there were ample stocks and production of rosin to take care of the full needs of the soap industry and to replace to a great extent the short supplies of fats and oils, especially scarce coconut oil. He pointed out the improvements in present-day rosins and how just as fine free-flowing spray soaps, practically white and lighter in color than many of the products now on the market which contain no rosin, can now be produced. He also stated that the new rosins and soaps were not just war babies, but are the result of three years research and that their coming to market during the present fat stringency is merely a coincidence. He predicted that the present expanded use of rosin in soap would continue after the war and the return of normal conditions. (An article on the present and future possibilities of rosins in soap manufacture written by Mr. Mayfield especially for *Soap & Sanitary Chemicals* appears elsewhere in this issue.)

Raise Fatty Acid Prices

Fixed dollars and cents maximum prices for certain raw and acidulated soap stocks at West Coast points were named March 15, by the OPA at the same levels as ceilings set previously for these products when sold in the midwest. The new West Coast ceilings specified include soybean oil, acidulated cottonseed foots, cottonseed foots and soybean foots. Price increases were granted in the new Amendment No. 25 to Revised Price Schedule No. 53 (Fats and Oils) on some distilled fatty acids because maximums originally set were out of price line with other competing products. The increase on soybean fatty acid was one-cent per pound, bringing the new ceiling to 11 cents; the raise on corn oil fatty acids of ⅞-cent per pound brings that commodity maximum price up to 11⅛ cents per pound. There will be no advance in soap maximums because of the fatty acid increases because, says the OPA, these costs represent a very small part of the soap price. The amendment became effective March 20.

Container Div. Personnel Changes

Russell C. Mowrer, former vice-president of Manz Corp., Chicago, color and catalog printers, was appointed recently as director of the containers division of the WPB. He succeeds Charles L. Sheldon, resigned, who is returning to Hood Rubber Co., Watertown, Mass. Mr. Mowrer was deputy director of the containers division. E. F. Tomiska, assistant director of the division, succeeds Mr. Mowrer as deputy. He is on leave from Western Electric Co., New York. Allan L. Brack, chief of the fibre section division succeeds Mr. Tomiska as assistant division director. He formerly was president of Brack Container Corp., Rochester.

Name Fatty Acid Ind. Group

Members of the newly formed Fatty Acids Manufacturers Industry Food Advisory Committee include: H. G. Bissinger, E. F. Drew & Co., New York; A. G. H. Reimold, Woburn Degreasing Co. of N. J., Harrison; W. T. Reddish, W. C. Hardesty Co., Inc., New York; Philip Brendel, Southern Cotton Oil Co., New York; Howard Dock, M. Werk Co., Cincinnati; R. A. Duncan, Procter & Gamble Co., Cincinnati; Edward W. Freundt, Armour & Co., Chicago; Stanley J. Goranflo, Wilson & Co., Philadelphia; Frank C. Haas, Werner G. Smith Co., Cleveland; Dr. D. L. Weatherhead, Darling & Co., Chicago; Clarkson Taylor, Harkness & Cowing Co., Cincinnati; August J. Spieler, Celina Stearic Acid Co., Celina, O.; A. W. Schubert, Emery Industries, Inc., Cincinnati; and David Mahany, A. Gross & Co., New York.

Chicago Drug Assn. Elects

Joseph P. Sullivan of Grasselli Chemicals Dept., E. I. Du Pont de Nemours & Co., was elected president of the Chicago Drug & Chemical Association, at the annual meeting, March 25. Other officers elected include the following: vice-president, F. Dean Hildebrandt, Prior Chemical Corp.; secretary, Gerald F. Pauley, Monsanto Chemical Co.; treasurer, Edgar E. Brand, L. Sonneborn Sons, Inc. Directors elected for a two-year term were Thos. A. Brennan, Norwich Pharmacal Co.; Harry E. Dunning, DeMert & Dougherty, Inc.; Wm. M. Medbery, International Cellucotton Products Co.; and J. F. Rudolph, U. S. Industrial Chemicals, Inc.

ACS Asks Early Reservations

As plans are completed for the 34th annual meeting of the American Oil Chemists Society in New Orleans, May 12 to 14, inclusive, the local committee, headed by Dr. K. S. Markley of the Southern Regional Research Laboratory, New Orleans, La., asks that reservations be made as early as possible. The Roosevelt Hotel will be convention headquarters and will be the scene of the technical sessions, committee meetings and the dinner-dance.

The bomb with the tattle-tale can

You watch a soldier ram a "tin can" (of all things) into the tail of a bomb. You wonder: "What's that for?"

Bombs used for training our bombardiers contain sand instead of high explosive. Yet every practice bomb dropped must "explode" to show observers the hit.

The can holds five pounds of black powder. When the bomb lands, the powder explodes with a puff of smoke. The hit is recorded by aerial camera. What the cadet bombardier learns from it will some day mean trouble for an Axis target.

You know, of course, why this powder for the Army is packed in cans. Wet powder's no good. Like food, oil, and ammunition, it must be completely protected.

Metal containers "can take it." They don't break, chip or tear. They protect against light, heat, dirt, moisture, insects. They get there—*safe*.

That's why millions upon millions of cans are going to war. That's why you can't get all the things you used to in America's favorite container.

The can will come home some day—better than you've ever known, thanks to our job as packaging headquarters for Johnny Doughboy & Co.

NEED HELP ON WAR WORK?

Metal containers are delivering the goods safely—foods, supplies, and bullets arrive ready for action. Continental is making millions of these cans along with other war needs, including plane parts.

Yet, rushed as we are, we can still take on more! Right now, a part of our vast metal-working facilities for forming, stamping, machining and assembly is still available. Write or phone our War Products Council, 100 East 42nd St., New York.

It gets there-safe-in cans

CONTINENTAL CAN COMPANY

HELP CAN THE AXIS—BUY WAR BONDS

ANTOINE CHIRIS

Antoine Chiris was established in France in 1768 and all through these years pioneered in the development of its long-known worldwide organizations. The American branch was established in New York in 1899.

CHIRIS

is prominent in

PERFUME BASES

AROMATIC MATERIALS

for

PERFUMES · COSMETICS · SOAPS

Long and persistent experience in research enables Antoine Chiris to solve your problems of replacement, substitution or adjustment.

ANTOINE CHIRIS COMPANY, INC.

115-117 EAST 23rd STREET, NEW YORK, N. Y.

SOLE DISTRIBUTORS IN NORTH AMERICA FOR

PIERRE DHUMEZ ET CIE — ETS ANTOINE CHIRIS, GRASSE, FRANCE — PILAR FRERE

ANTOINE CHIRIS, LTD., LONDON, ENGLAND

Soap Buying Spree Reported

The bogey of soap rationing with a consequent buying spree has cropped up again—this time in Huntington, W. Va. As a result of totally unconfirmed rumors, which were later denied by the OPA, a run on soap in most of the downtown Huntington stores took place recently. One store began to limit purchases only after 6,000 bars of soap and 60 cases of soap powder—a normal month's supply—were sold. All stores in the city reported crowded conditions at soap counters.

Soap Red Cross Drive Lags

With less than two weeks to go until the American Red Cross War Fund Drive closes, collections for the New York area lagged far behind the quota of $10,000 which was set for the industry. The Chemical Industry Division, of which William E. Cotter of Union Carbide & Carbon Corp. is chairman, exceeded its quota of $200,000 almost as soon as the drive began. Union Carbide & Carbon Company's contribution of $100,000 to the local drive and $200,000 to the national effort, have helped considerably in breaking the quota set for the Chemical Industry. Vice-chairmen of the Soap Division are Oscar M. Burke of Manhattan Soap Co., and N. S. Dahl of John T. Stanley Co. Percy Magnus of Magnus, Mabee & Reynard is chairman for the Essential Oils group which had nearly made its quota two weeks before the close of the campaign.

All those wishing to make contributions are urged to do so by sending checks to the American Red Cross, c/o William E. Cotter, Union Carbide and Chemical Corp., 30 E. 42nd Street, New York.

Soapers Get Safety Awards

Lever Brothers Co., Edgewater, N. J., was among the group winners in the 15th statewide New Jersey interplant safety contest which was conducted during the last quarter of 1942 under the sponsorship of the New Jersey State Department of Labor. The results, which were recently announced by the State Labor Commissioner, John J. Toohey, Jr., included the awarding of a certificate for perfect safety records during the competition to J. Eavenson & Sons, Division of Wilson & Co., Camden, N. J.

Scrap Drive Nets 844,655 Lbs.

Nearly one million pounds of vital scrap materials for use in the war effort have been contributed in the past two months by soap makers of Greater New York through the efforts of the Industrial Salvage Committee working in cooperation with the War Production Board. Nineteen industrial companies are participating in this committee. A breakdown of contributions shows that 607,457 pounds of iron and steel, 7,295 pounds of non-ferrous materials, copper, brass, tin, zinc, lead, etc., and 229,901 pounds of rags, paper and other waste have been turned in.

Under the direction of the Executive Committee, headed by S. W. Blackett, Procter & Gamble Mfg. Co., Staten Island, N. Y., soap manufacturers have been following procedures recommended by the WPB, and R. Merrill Decker, Regional Chief, New York Region Industrial Salvage Section, WPB. Thorough clean-ups have been made of discarded and obsolete equipment, and a goal has been set of absolute elimination of all waste, spoilage and the utilization of all critical materials to the best advantage.

C. H. Gamble Addresses YMCA

Cecil H. Gamble, an executive of the Procter & Gamble Co., Cincinnati, and a grandson of one of the company's founders, was the principal speaker at ceremonies marking the recent 70th anniversary of the establishment of the Y.M.C.A. at the University of Illinois, Urbana, Ill. Nationally prominent as a leader in Y.M.C.A. work, Mr. Gamble discussed the organization's influence in building character.

Cudahy Uses Flower Premiums

Cudahy Soap Works, Omaha, Nebr., is offering a "Complete Victory Flower Garden" as a premium to purchasers of "Old Dutch" household cleaner. Ten gladiolus bulbs, plus eight packets of flower seeds are offered for 25 cents and two labels from the container.

C-P-P '42 Earnings Off

Earnings in 1942 for Colgate-Palmolive-Peet Co., Jersey City, N. J., were $5,383,595, equal to $2.47 a share on the common stock. In spite of the fact that the company's sales were the highest in its history, $118,968,117, net profit fell below that of 1941, which was $6,604,891, or $3.09 a share on the common stock. Income and excess profits taxes amounted to $4,803,242 in 1942 as against $3,688,558 for the previous year.

New Soap Wrap Restrictions

Use of glassine, greaseproof and vegetable parchment papers in the wrapping or packaging of soap is subject to rigid restriction under WPB order M-286. Deliveries received on or after March 19 can no longer be used, except when the paper is laminated to the body of the container. Exemptions are provided for packaging soaps for delivery to the Army, Navy, certain government agencies and orders for Lend-Lease.

W. F. Pierce, Soap Salesman, Dies

William F. Pierce, 73, a retired soap salesman, died March 14, at his home in Cambridge, Mass., after a long illness. Born in Cambridge, Mr. Pierce was formerly associated with L. Kemp & Sons of Cambridge, manufacturers of laundry soap, and remained as an employe when the company merged with Consolidated Rendering Co. He retired five years ago after 35 years' service. Surviving are his wife; two sons, Carl Hilton Pierce of Seattle and Ralph Wilson Pierce of Cranston, R. I., and a daughter, Mrs. Lillian Pierce Littlefield of Belmont, Mass.

Mathieson Gets "E" Award

Mathieson Alkali Works, Inc., Niagara Falls, N. Y., received the Army-Navy Production Award recently. Colonel Harry A. Kuhn, of the office of the chief of Chemical Warfare Service, United States Army, presented the "E" Flag, which was received by G. W. Dolan, executive vice-president. Lieutenant Commander George W. Eighmy, U.S.N.R. presented "E" pins to a committee representing employees and the management.

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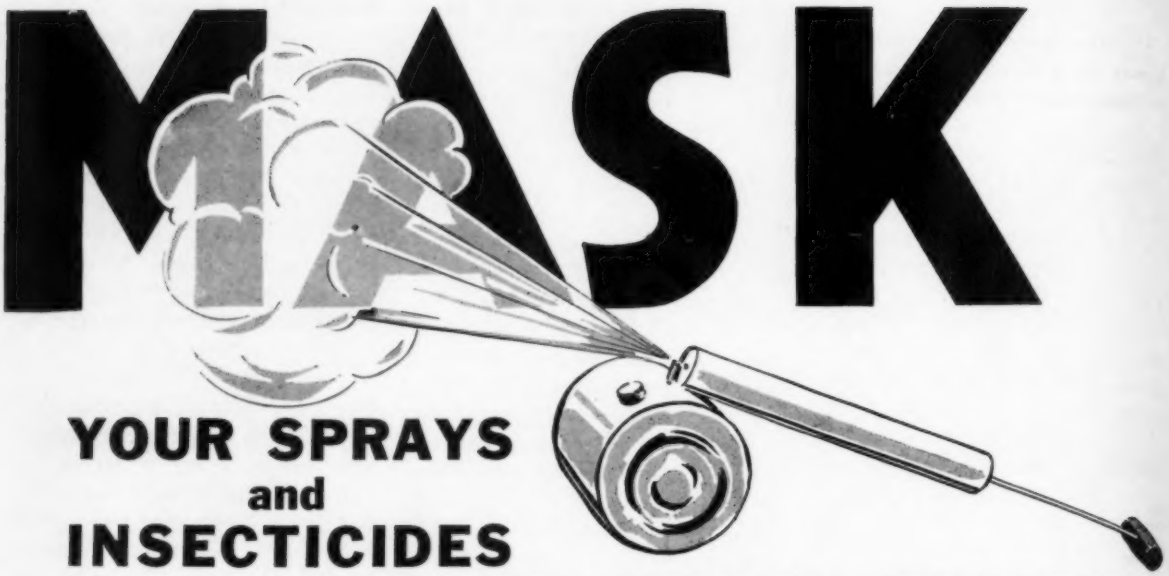

YOUR SPRAYS and INSECTICIDES with these LOW-PRICED DEODORANT SPECIALTIES

The following widely used specialties are recommended because they are time-proven, easy to use, low in cost and unfailing in results:

NEUTROLEUM

For fly sprays and other preparations based upon petroleum distillates. It neutralizes and perfumes at very low cost.

THANITE DEODORANTS

Several types available depending upon whether the unpleasant odor of Thanite is merely to be neutralized or if, in addition, the finished spray is to be mildly scented. Regardless of type selected, these deodorants completely mask the objectionable Thanite effect.

DEODORANT P-36

Offered especially for sprays based upon Lethane 384 Special. Does a complete job of deodorization at negligible cost.

JAVOLLAL

An effective substitute for citronella. Imparts a cleaner, more agreeable odor to insecticides and disinfectants.

SAFRELLA

Closely resembles artificial sassafras in odor and strength. Replaces it in insecticides, germicides and other technical mixtures, — and at much lower cost.

ALSO a complete line of Essential Oils, Aromatic Chemicals and Basic Perfume Raw Materials for soap and insecticide manufacturers, as well as the technical and laboratory services and facilities to aid our customers in using these materials to best advantage. Write us for details.

FRITZSCHE BROTHERS, Inc.

PORT AUTHORITY COMMERCE BLDG., 76 NINTH AVENUE, NEW YORK, N. Y.

BRANCH STOCKS

BOSTON · CHICAGO · LOS ANGELES · ST. LOUIS · TORONTO, CANADA · MEXICO, D. F.

FACTORIES AT CLIFTON, N. J. AND SEILLANS (VAR) FRANCE

54

In our Country's Service

Silver Star To Dimick

A reception in honor of Arthur Dimick was given recently at the office of Industrial Chemical Sales Division

ARTHUR DIMICK

of West Virginia Pulp & Paper Co., New York, during his furlough from the U. S. Naval Hospital, Oakland, Cal. Prior to his enlistment in the Marine Corps in December, 1941, Bud Dimick was attached to the Cleveland office of I.C.S., handling sale of tall oil and activated carbon. Upon his return to San Francisco from Guadalcanal, he was awarded the Silver Star Citation, "for conspicuous gallantry and intrepidity in action against the enemy." During an attack on Jap positions at Guadalcanal when his company was threatened by fire from an enemy 37 mm. gun, Corporal Dimick, with complete disregard for his own safety, in the company of two other marines, rushed forward in the face of enemy fire, destroyed the hostile gun crew, and put the gun out of action.

◆

Four Fighting Huiskings

With the entrance of Edward P. Huisking into the armed services, recently when he was commsisioned as a second lieutenant in the U. S. Marine Corps Reserve, four of Mr. and Mrs. Charles L. Huisking's five sons are now serving their country. The four Huisking boys, whose father is the head of Charles L. Huisking & Co., New York drug firm, and Conti Products Co., "Conti Castile Shampoo," Brooklyn, are all graduates of the University of Notre Dame. Besides Edward, Frank R., a pilot in the Army Air Corp, having completed basic training in San Antonio, is taking advanced courses in Fort Worth, Texas; William W. is a staff sergeant in the Army and on special duty in the New York area; the youngest son, Richard V. is an ensign in the U. S. Navy.

In addition to the four boys in service, another son, Charles, Jr., is taking over Ed's job as treasurer of Aircraft Screw Products Corp. Mr. and Mrs. Huisking also have three younger daughters.

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Solvay Miami Representatives

Solvay Sales Corp., New York, has just appointed Biscayne Chemical Laboratories, Miami, Florida, as its representatives for the company's line of industrial chemicals in the Miami area.

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Fat & Oil Data

The preliminary fats and oils report of the Department of Commerce, which was issued March 10, shows that for the month ending January 31, production of inedible tallow was 68,686,000 pounds and consumption was 103,440,000 pounds. The factory and warehouse stocks for this period dropped to 175,391,000 pounds, as compared with 197,475,000 pounds for the month ending Dec. 31. Consumption for the month ending December 31, was 104,347,000 pounds, while production was 69,941,000 pounds.

Production of crude coconut oil for the month of January was 8,362,000 pounds, while consumption was 6,132,000 pounds. Factory and warehouse stocks as of January 31, 1943 were 136,684,000 pounds. Stocks at the close of December, 1942, amounted to 134,971,000 pounds. Consumption during the month of December was 7,442,000 pounds and production 7,472,000 pounds.

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Flavoring Extract Mfrs. To Meet

The Flavoring Extract Manufacturers' Association will hold its annual business meeting in the Hotel Pennsylvania, New York, May 24 and 25.

Try-Aid Owner Ensign

Donald L. Friedman, former owner of Try-Aid Chemical Co., manufacturers of "Try-Aid" washing fluid,

DONALD L. FRIEDMAN

cleaning powder and chemical cleaning supplies, Youngstown, Ohio, has been commissioned an ensign in the U.S. N.R., and has reported for active duty at Harvard University for a five-months' advanced training course. Try-Aid Chemical Co. has been sold outright to Henry McCrone of Poland, Ohio. The plant and business will be carried on by Mr. McCrone at Poland.

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Lever Buys Food Interest

Lever Brothers & Unilever, Ltd., London, England, has bought the controlling interest in Frosted Foods, Ltd., British subsidiary of General Foods Corp., New York, it was announced here March 30, by Edwin T. Gibson, vice-president of General Foods Corp. Lever Brothers & Unilever are reported at present very much interested in the processed foods industry and are said to be planning to bring out new lines after the war, extending the processing and sale of quick frozen foods to all parts of the world outside of the United States and its possessions.

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Allocate Drums & Parts

The sale, delivery or use of new steel drums and parts (except flanges, plugs and cap seal) without specific authorization have been banned by amended WPB Order M-255. Form PD-835 is to be used in applying for authorization to buy new steel drums or parts.

Improve Your Product & Profit

Metso Granular ($Na_2SiO_3 \cdot 5H_2O$), original sodium metasilicate, white, granular, free-flowing product.

Metso Fines, sodium metasilicate. Same as Granular in composition. Finely powdered for special compounds.

Metso Anhydrous (Na_2SiO_3), sodium metasilicate, without water of crystallization.

Metso 99 ($Na_3HSiO_4 \cdot 5H_2O$), sodium sesquisilicate. White Granular and free-flowing.

GC ($Na_2O \cdot 2SiO_2$), powdered sodium silicate. Hydrated, alkaline, rapidly soluble.

G ($Na_2O \cdot 3.22SiO_2$), hydrated powdered sodium silicate, rapidly soluble.

The popularity of PQ Silicated cleansers and compounds grows and grows. The principal difference between PQ Silicates and other alkalis is properly balanced soluble silica content which contributes these five big advantages to your private brands:

1. **Restrains corrosive action**
2. **Effectively buffers to sustain cleaning power**
3. **Rinses freely**
4. **Prevents dirt from redepositing on clean surfaces**
5. **Priced economically as basic chemical**

PQ Soluble Silicates are easy to work with, mix well with soaps, other alkalis, sequestering and wetting agents. Send now for descriptive bulletins, for samples, for prices. All grades are available for prompt deliveries.

PHILADELPHIA QUARTZ CO.

SILICATES OF SODA

125 S. THIRD STREET, PHILA., PA.

M. M. & R. entertains 325 guests at annual drug wholesalers' dinner, at Hotel Astor, New York City.

Annual MM&R Drug Dinner

More than 325 guests, including drug wholesalers from all parts of the country, many executives of drug and pharmaceutical houses and 34 members of the trade press, attended the annual drug dinner given by Magnus, Mabee & Reynard, essential oil house, New York, at the Hotel Astor, recently.

Speakers at the beefsteak party were: Percy C. Magnus, president of MM&R, G. Van Gorder, member of the board of McKesson & Robbins, Charles A. Loring, president of Gilmore Bros., Boston, and David H. Dureau, former mayor of Melbourne, Australia. Mr. Dureau, said to be Australia's largest producer of eucalyptus oil and an important MM&R supplier, expressed Australia's thanks for America's help in warding off invasion.

Sale Drive on "Floroma" Soap

Sears, Roebuck & Co., conducted a special sale for "Floroma" flower soap in their Chicago retail outlet stores during March. This flower-scented, flower-shaped soap, in assorted designs, colors and scents, was offered in packages of four to eight bars, at 49 cents a box.

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Sanitary Institute Elects

The Sanitary Institute of America, at its 11th annual convention in Chicago, March 16-17, re-elected Benjamin Laikin of Consumers Paper Co., Detroit, as president, and Robert Wise, Textile Waste Supply Co., Chelsea, Mass., as vice-president. E. D. Szold, Chicago, was continued as executive secretary. Convention sessions were devoted to discussion of manpower problems, costs of production, price ceilings, federal specifications, salvage drives and other topics. The ninety firms which comprise the Institute's membership are heavy buyers of soaps and cleaning compounds for use in processing industrial wiping cloths.

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New Cenol Counter Display

Cenol Co., Chicago, is promoting an intensified sales campaign on behalf of its "Clean-Up", general purpose shampoo-type household cleaner, which was introduced to the trade about a year ago. One 2-ounce package of the compound is added to a gallon of water to produce an odorless, non-inflammable cleaner, especially recommended for rugs and upholstery. Attractive counter display material intended for grouping around a gallon jug as a background is being supplied to dealers who purchase in one-dozen lots. Both the package and display material, lithographed by Milprint, Inc., Milwaukee, Wis., use a blue and orange color scheme. See photo, page 33.

Postpone Caustic Shipping Rules

The date for the imposition of controls on shipments of caustic soda has been postponed by the WPB from April 1 to May 1, according to an announcement made March 19. The action of the WPB in setting up zones, and banning cross-hauling from one zone to another, was reported in full in the March issue of *Soap & Sanitary Chemicals*, (pages 59-61), and a map indicating the 13 areas into which the country has been divided, appeared with the article. The reason for the delay in putting the new restrictions into effect is that several producers had requested additional time in which to complete arrangements for the exchange of customers, to bring their businesses within their prescribed zones.

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P&G Credit Man Dies

Robert E. Seybert, 50, credit manager for Procter & Gamble Distributing Co., Philadelphia, was stricken with a heart ailment March 2, and died a few minutes later in the Carpenter Lane station of the Pennsylvania Railroad in Philadelphia. He had been associated with the soap firm for more than 30 years. Surviving are his widow, two daughters: Mrs. Mary Helmetag, Miss Virginia Seybert and one son, Robert, Jr.

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S. F. Baker & Co. Suspend

S. F. Baker & Co., Keokuk, Iowa, manufacturers of proprietary medicines, have recently discontinued operations.

Ever Eat RAW FISH?

U. S. Navy Life Boats now carry CANNED Fishing Tackle!

RAW FISH may not sound very palatable . . . but it can mean the difference between life and death to a shipwrecked sailor.

So the United States Navy is now equipping life boats and life rafts with *cans* containing fish hooks, lures, lines, jigs, spear and gaffs . . . to be used to catch fish to supplement emergency rations.

This emergency fishing kit is supplied not only to the Navy, but also to the U. S. Maritime Commission by the Edward K. Tryon Company of Philadelphia . . . and we're proud to say much of it is packed in Crown Cans specially designed for the job.

Cans for packing fish is an old story. Canned fishing tackle is one of the new jobs the war has brought to Crown Can!

CROWN CAN COMPANY, PHILADELPHIA • NEW YORK • *Division of Crown Cork & Seal Co.* • *Baltimore, Md.*

★ ★ ★ CROWN CAN ★ ★ ★

BIDS AWARDS

Low Marine Corps Bids

Low bids on varying amounts of dishwashing compound detergent to be delivered at four points were submitted in a recent opening for miscellaneous supplies by the Marine Corps, Washington, D. C., by: Cunningham Cleanser Corp., New York, N. Y., 3.94c on 30,000 lbs. to be delivered in Philadelphia; Alex C. Fergusson Co., Philadelphia, and Cunningham Cleanser Corp., New York, N. Y., 4.28c (identical bids) on 10,000 lbs. to be delivered in Norfolk, Va.; Cowles Detergent Co., Cleveland, Ohio, 4.1c on 40,000 lbs. to be delivered to New River, N. C.; Virginia-Carolina Chemical Corp., Richmond, Va., 4.15c on 60,000 lbs. to be delivered to Parris Island, S. C.

AMA Soap Awards

The following awards for miscellaneous supplies have been made in recent openings by the Agricultural Marketing Administration of the Department of Agriculture, Washington, D. C.: 120,000 lbs. of blue mottled laundry soap, John T. Stanley Co., New York, N. Y., at 6.15c; blue streaked laundry soap, John T. Stanley Co., New York, N. Y., 250,000 lbs. at 6.15 c; Colgate-Palmolive-Peet Co., Jersey City, N. J., 650,000 lbs. at 6.18c; Armour & Co., Chicago, 200,000 lbs. at 6.14c; soap chips, 100,000 lbs. at 11.89c, to Armour & Co., of Del., Chicago; John T. Stanley Co., New York, N. Y., 500,000 lbs. of blue mottled laundry soap at 6.6c; Newell-Gutradt Co., San Francisco, 50,000 lbs. at 5.35c; Armour & Co., Chicago, 1,000,000 lbs. of blue streaked laundry soap at 6.21c; Procter & Gamble Distributing Co., Cincinnati, 675,000 lbs. at 6.5c; John T. Stanley Co., New York, N. Y., 800,000 lbs. at 6.15c; Colgate-Palmolive-Peet Co., Jersey City, N. J., 1,750,000 lbs. at 6.18c; and Newell-Gutradt Co., San Francisco, 50,000 lbs. at 4.85c; Stahl Brothers, New York, N. Y., 1,000,000 lbs. of toilet soap at 15.99c; Swift & Co., Chicago, 200,000 lbs. at 14.97c; Swift & Co., Chicago, 200,000 lbs. of laundry soap powder at 11.5c; Chester A. Gash, New York, N. Y., 10,000 lbs. of scouring cleanser at 3.425c; Armour & Co., Chicago, 100,000 lbs. at 3.4c.

Low Sweeping Compound Bids

Among the low bids submitted in a recent opening for 70,000 lbs. of sweeping mineral oil compound in 200 lb. barrels by New York Navy Purchasing Office, New York, were those of: Sanitary Floor Compound Co., Paterson, N. J., $2.60 per 200 lbs.; Unity Sanitary Supply Co., New York, N. Y., 1.4c; A. L. Cahn & Sons, New York, N. Y., 2.2c in 250 lb. barrels; Newell Sawdust Supply Co., Long Island City, N. Y., 2.5c.

Hollingshead Naval Award

R. M. Hollingshead Corp., Camden, N. J., received the award on 310,032 2-oz. containers of powder insecticide for body lice in a recent opening for miscellaneous supplies by the New York Navy Purchasing Office, N. Y. The award was made on the basis of bids of 5.193c; $.006; and $.006.

Low Shaving Soap Bid

N. Brittingham & Sons, Philadelphia, Pa., submitted the low bid of 24.9c on 1800 lbs. of shaving soap in a recent opening for miscellaneous supplies by the Treasury Procurement Department, Washington, D. C. The bid was accepted.

Hercules Opens Boston Office

Hercules Powder Co., Wilmington, Del., opened sales offices for its cellulose products, Naval Stores, synthetics, explosives and paper makers chemical departments on the seventh floor of the Statler building, Boston, April 1. The following departmental heads will make their headquarters in the new Boston office: Homer C. Simmons, New England sales manager of the cellulose products department, formerly of Stoneham, Mass.; Howard C. Bates, in charge of synthetics department sales; and W. M. Williams, newly-appointed resident manager of the Paper Makers Chemical Department's plant at Stoneham, will, in addition, head the industrial chemical division sales group of the PMC Department in Boston. G. J. Rising, former resident manager at Stoneham, will be transferred to the Hercules office in Pittsburgh, Pa., where he will represent the industrial chemical division.

"BIMS" Schedule Golf

BIMS of New York, comprising members of the cosmetic, soap, drug, perfuming materials and allied groups, have announced two golf tournaments to be held this summer, conditions permitting. Martin Schultes of Hewitt Soap Co., chairman of the N. Y. BIMS, states that only two golf meetings will be held this year instead of the customary four, the first on June 24 at the Wykagyl Country Club, New Rochelle, and the second on August 24 at the Garden City Country Club, Garden City, L. I. Both courses were chosen because of easy access by rail or bus. Prizes again this year will be in the form of war stamps and bonds. At a meeting of the executive committee at the Waldorf Astoria, New York, on April 1, BIMS voted to buy a $1,000 war bond from surplus funds.

N.Y. D&C Club Elects

At a dinner held in honor of William J. Reynolds, retiring president, recently, the following officers of the Drug & Chemical Club, New York, were elected for the coming year: President, Francis J. McDonough, New York Quinine & Chemical Works; vice-president, Archibald J. Smith; treasurer, S. Barksdale Penick, Jr., S. B. Penick & Co.; secretary, Floyd N. Dull.

GERANIUM IMITATION

EUCALYPTUS OIL

ORANGE OIL SWEET

ROSEMARY OIL SPANISH

GUAIAC-WOOD OIL

EUGENOL U.S.P. "G.L."

LAVENDER IMITATION

URGENT—**BUY BONDS**

EUCALYPTOL C.P.

DIPHENYL OXIDE

ERIGERON OIL

RHODINOL EXTRA G.L.

SANDALWOOD E.I.

EST. 1885

&

CLOVE OIL

OPOPONAX

GEORGE LUEDERS & CO.

427-429 WASHINGTON STREET NEW YORK

BRANCHES

CHICAGO • SAN FRANCISCO • MONTREAL

REPRESENTATIVES: ST. LOUIS PHILADELPHIA

TRADE MARKS

The following trade-marks were published in the March issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Marks

RAD—This in extra large, bold underscored letters for soap. Filed June 27, 1942 by Roth Appliance Distributors, Inc., Milwaukee, Wis. Claims use since Aug. 15, 1942.

STANOX—This in bold, block letters for insecticides. Filed Dec. 11, 1942 by California Spray-Chemical Corp., Wilmington, Del. Claims use since Sept. 8, 1942.

DN-111—This in script letters above the figures 111, all within a circle for insecticide. Filed Dec. 26, 1942 by Dow Chemical Co., Midland, Mich. Claims use since May 11, 1942.

BORE CLEANER—This in open lettering within a circle running around the barrel of a gun and featuring two boars' heads for gun cleaner. Filed Dec. 30, 1942 by Knorr-Maynard, Inc., Detroit, Mich. Claims use since Nov. 5, 1942.

STRIPTEX—This in bold stencil lettering for soluble cleaning compound in powdered form. Filed Jan. 7, 1943 by The Diversey Corp., Chicago, Ill. Claims use since Nov. 16, 1942.

MIKRO SAN—This in bold upper and lower case letters superimposed on a maple leaf for an acid cleaner composition. Filed Dec. 31, 1941 by Paul W. Bonewitz, doing business as P. W. Bonewitz Co., Burlington, Iowa, assignor to The Rex Co., Burlington, Iowa. Claims use since July 15, 1941.

JACKSON'S REVIVA — This in bold upper case letters for spot remover and cleaner. Filed Mar. 18, 1942 by Ida Jackson, doing business as Jackson of London Products, New York, N. Y. Claims use since July 15, 1939.

SOILAX—This in bold upper and lower case letters for a cleansing compound having water softening properties. Filed Dec. 14, 1942 by Economics Laboratory, Inc., St. Paul, Minnesota. Claims use since Dec. 1, 1923; and since Oct. 1, 1937 in present lettering.

COLE-SOLV—This in large upper and lower case lettering for household cleanser in liquid form. Filed Dec. 19, 1942 by Cole Laboratories, Inc., Long Island City, N. Y. Claims use since Nov. 20, 1942.

SCOUREE—This in bold upper case lettering for metal polish. Filed Jan. 18, 1943 by Oil Specialties & Refining Co., Brooklyn, N. Y. Claims use since 1880.

SWEET SATURDAY NIGHT—This in bold upper and lower case lettering the word Sweet above the other two, for toilet soap. Filed Jan. 20, 1943 by Billy B. Van, doing business as Billy B. Van Sales Co., Newport, N. H. Claims use since Dec. 12, 1942.

C. C. PARSONS' HOUSEHOLD CLEANSER—This in upper case open lettering in three lines on a checkered background for ammonia substitute. Filed Nov. 21, 1942 by Parsons Ammonia Co., New York, N. Y. Claims use since Nov. 5, 1942.

GERM-O-DED — This in bold block lettering for preparation for treatment of athlete's foot and other skin ailments. Filed Jan. 9, 1943 by William C. Vaughan, Minor Hill, Tenn. Claims use since 1938.

XTRA-CHLOR — This in bold block slanting letters on two lines for germicide and deodorant. Filed Jan. 11, 1942, by The J. B. Ford Co., Wyandotte, Mich. Claims use since July, 1942.

SANI-SAN—This in bold upper case lettering for soap shampoos. Filed Jan. 11, 1943 by Manhattan Kreole Products, Inc., doing business also as Sani-Sealed Laboratories, Brooklyn, N. Y. Claims use since Mar. 21, 1942.

MOTH FINALE—This in upper and lower case lettering, the word Moth above the extended cross bar of the letter f and four moths flying off to the right for moth exterminating preparation. Filed Jan. 13, 1943 by Jean Vivaudou & Co., Inc., New York, N. Y. Claims use since Dec. 1, 1942.

NYRAY—This in bold block lettering for soap. Filed Mar. 17, 1942 by Colgate-Palmolive-Peet Co., Jersey City, N. J. Claims use since Feb. 10, 1942.

CHEM-CREAM — This in light upper case lettering for automobile, etc. bodies. Filed Mar. 18, 1942 by Lee H. Thompson, doing business as Southern Supply Co., Pasadena, Calif. Claims use since Jan. 15, 1939.

SOLVEASE—This in bold block lettering for crystalline cleaning powder. Filed April 1, 1942 by Ann Russell, doing business as the Russell Chemical Co., Cleveland, Ohio. Claims use since Aug. 13, 1934.

WATAWAX—This in reverse lettering on a black bowlike background for cleaning compound with polishing properties for furniture, automobiles, woodwork, floors, glass, porcelain, etc. Filed Dec. 8, 1942 by Julius E. Johnson, doing business as J. E. Johnson & Co., Chicago, Ill. Claims use since Dec. 1, 1936.

JINX—This in bold block letters for self-polish floor and furniture wax. Filed Dec. 8, 1942 by Claire Mfg. Co., Chicago, Ill. Claims use since June 1, 1941.

SOLE-GRIP—This in bold lettering for floor dressing. Filed Jan. 12, 1943 by Masury-Young Co., Boston, Mass. Claims use since Sept. 17, 1942.

ZIMCO—This in bold upper case lettering for furniture polish. Filed Jan. 13, 1943 by Edward S. Carmack, doing business as Zip Mfg. Co., Little Rock, Ark. Claims use since Nov. 22, 1941.

MARIE PETERSEN — This in script lettering showing the figure of a ballet dancer for a complete line of cosmetics and toilet preparations. Filed June 17, 1942 by Cosmetics, Inc., Nashville, Tenn. Claims use since Sept. 1, 1941.

MUNN

TRADE MARK REG. U. S. PAT. OFFICE

M WOOD ROSIN

Fats are scarce. Munn is plentiful. Munn, long popular in soap manufacture, is now becoming a "*must*" where soaps of Uniform Quality are to be made.

Shipments of this M. Wood Rosin never vary. Munn is *always* Uniform . . . *always* clean . . . always Popular in the Soap Industry. Try MUNN now.

NEWPORT INDUSTRIES, Inc.

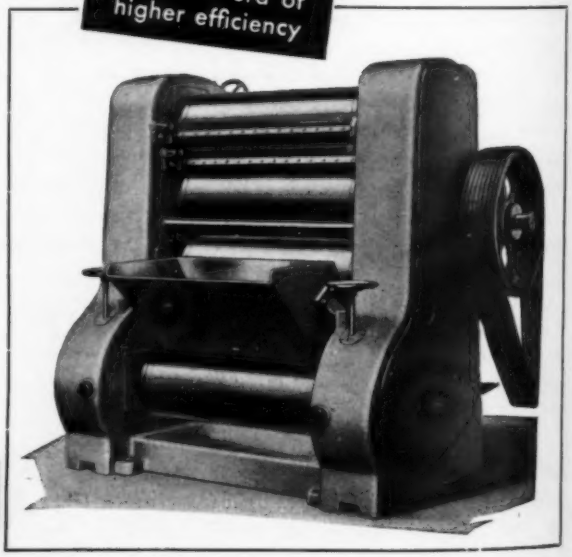
250 PARK AVENUE NEW YORK, N. Y.

Guns and Tanks Will Be SOAP MACHINES Again One Day

THE pendulum will swing. The metal that normally would have made a soap plodder or mill has been converted into a gun or tank. But the day will come again — soon — when the guns and tanks will be changed back to machines to provide the things of a fuller, better life.

On that day LEHMANN machines will again give notable help to the Soap Industry by providing unexcelled efficiency in the production of soap products. They will again be the best machines that scientific designing and expert workmanship can produce.

A LEHMANN SOAP MILL designed for post-war era of higher efficiency



LEHMANN

The Standard for Quality in Machinery Since 1834

We will gladly TALK with you about your post-war requirements.

J. M. LEHMANN COMPANY, INC.

MAIN OFFICE & FACTORY • LYNDHURST, NEW JERSEY

COLGATE RIBBON DENTAL CREAM—This in upper case reverse lettering for dental cream. Filed Oct. 24, 1943 by Colgate-Palmolive-Peet Co., Jersey City, N. J. Claims use since July 27, 1934.

LUCIDERM—This in bold black lettering for germicidal compositions. Filed Jan. 7, 1943 by Wallace & Tiernan Products, Inc., Belleville, N. J. Claims use since Dec. 15, 1942.

RUB-X — This in bold upper case lettering for liquid cleaning and polishing compound for enameled and varnished surfaces, furniture, glass, metal, etc. Filed May 28, 1942, by Lee R. Timmons, doing business as Charles Paint Research Co., Kansas City, Mo. Claims use since Feb. 18, 1942.

Trade Marks Granted

400,242. Cleaner for removing old wax and wax emulsions from floors and other surfaces. Filed by S. C. Johnson & Son, Inc., Racine, Wis., July 2, 1942. Serial No. 454,012. Published Dec. 15, 1942. Class 4.

400,595. Insecticide Dust. Filed by Naco Fertilizer Co., New York, N. Y., March 30, 1942. Serial No. 454,022. Published June 16, 1942. Class 6.

400,596. Insecticide Dust. Filed by Naco Fertilizer Co., New York, N. Y., March 30, 1942. Serial No. 454,023. Published June 16, 1942. Class 6.

400,597. Washing Powder. Filed by George B. Mallory, doing business as Soap-Eater Co. of America, Albuquerque, N. Mex., April 7, 1942. Serial No. 454,195. Published January 12, 1943. Class 4.

400,649. Liquid and paste wax for furniture, the floors, etc. Filed by C. A. Woolsey Paint & Color Co., New York, N. Y., October 22, 1942. Serial No. 456,354. Published January 12, 1943. Class 16.

400,669. Preparation suitable for the treatment of athlete's foot, minor cuts, abrasions, etc. Filed by Leroy D. Soff, doing business as Specialty Chemical Co., Long Island City, N. Y. Filed November 3, 1942. Serial No. 456,632. Published January 5, 1943. Class 6.

400,398. Hard and soft water toilet soap. Filed by Sea Products Laboratories, Inc., New York, N. Y., October 17, 1941. Serial No. 447,894. Published December 29, 1942. Class 4.

SOAP RATIONING

No,—there is still no early prospect of soap rationing in the United States, but with an ear to the ground, and as insurance against the day when such a possibility might become an actuality, we are reviewing the experiences of the British soap industry with rationing in an article now in preparation for an early issue of SOAP & SANITARY CHEMICALS. Prepared by our British correspondent, it will tell how soap rationing has worked out in actual practice in England.

400,399. Soap. Filed by Sea Products Laboratories, Inc., New York, N. Y., November 12, 1941. Serial No. 448,586. Published December 29, 1942. Class 4.

400,410. Glass cleaning preparation, sweeping compound, laundry soap and soap powder. Filed by Plee-Zing, Inc., doing business as Household Products Co., Chicago, Ill., assignor to Household Products Co., a corporation of Illinois, April 24, 1942. Serial No. 452,567. Published December 29, 1942. Class 4.

400,468. Liquid solvent for removing scale and other incrustations from equipment. Filed by Garratt-Callahan Co. of California, San Francisco, Calif., November 2, 1942. Serial No. 456,596. Published December 29, 1942. Class 6.

400,303. Soothing cream for skin irritations. Filed by Harlan U. Bigalow, doing business as Hub Products Co., Cleveland, Ohio, October 14, 1941. Serial No. 447,780. Published December 15, 1942. Class 6.

400,337. Insect killer, insecticides and compositions for exterminating insects. Filed by H. W. Baldwin, doing business as Baldwin Laboratories, Saegertown, Pa., September 25, 1942. Serial No. 755,744. Published December 15, 1942. Class 6.

Wyandotte's Part in War

The extensive and varied part in the war taken by Wyandotte Chemicals Corp., Wyandotte, Mich., is described in an article appearing in the January-February issue of W.C.C. News. For many months now, 85 per cent of the man-hours in Wyandotte foundry and machine shops have been devoted to the processing of parts for army and navy use. Part of the coal produced by a subsidiary colliery of Wyandotte is used to heat army camps, and in power plants of firms doing war work. Apart from its large contribution of 4,402 tons of scrap to the salvage drive by the Michigan Alkali division of W.C.C., Wyandotte is supplying caustic soda and soda ash—frequently termed the backbone of the war-important heavy chemicals industry. Wyandotte products are used in the manufacture of synthetic rubber, plastics, explosives, optical glass for navigational instruments, aluminum and a host of other products essential to the winning of the war. The part played by washing materials used in civilian economy and for the armed service is helping maintain health on the home and battle fronts. Metal cleaners for parts of almost all the important implements of war are another product of Wyandotte. Dry ice, coke ovens and cement manufactured by Wyandotte Chemicals Corp. all figure prominently in various phases of production for war.

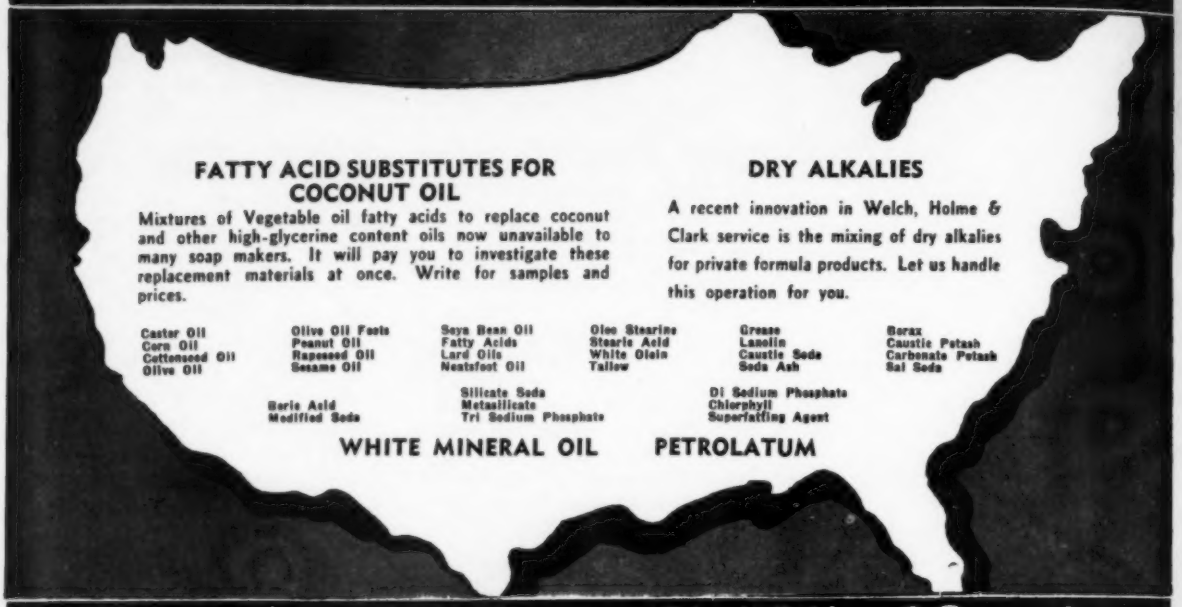
New Nielco Cleaner

Nielco Laboratories, Detroit, Mich., have just issued a bulletin covering their new alkali cleaner and deoxidizer for aluminum, copper, nickel and galvanized metal, called Nielco Lab No. 1921. The new cleaner, which is a water soluble powder comes in two forms: one for still tanks, the other for power washing machines.

Cole Serves Red Cross Drive

H. S. Cole, Chicago district manager of Procter & Gamble Distributing Co., is serving as chairman of the sub-committee which is soliciting contributions from soap manufacturers in the current Red Cross war fund drive in Chicago.

RAW MATERIALS FOR THE SOAP INDUSTRY



WELCH, HOLME & CLARK CO., Inc.

563 GREENWICH STREET ESTABLISHED 1838 NEW YORK CITY

COCOANUT FATTY ACID REPLACEMENTS

by

WOBURN

DEGREASING CO. OF N. J. Harrison, N. J.

Three Blends

To Meet Your Particular Requirements

C — clear, light yellow liquid — Titre °C, 21-25

CH — clear, light liquid — Titre °C, 21-25

CW — clear, White liquid — Titre °C, 11-15

MARKETS

As of March 31, 1943

THE dearth of trading which has typified the market in the past few months due to continuing and in some cases increasing supply shortages obtained during the month just closed. Nor is there any likelihood that the outlook for the immediate future will brighten to any considerable degree. That there has been interest on the part of buyers eager to replenish dwindling stocks is evident by the persistence of reports of "numerous inquiries." Sellers, on the other hand, in the unenviable position of having to turn down orders, are finding their activity reduced to smaller and smaller areas as a result of shortened supplies, price ceilings and further governmental controls over fats and oils. It is almost a truism to say that when shortages begin to develop in one group others are sure to break out in another group. This peculiar condition is clearly illustrated by figures just recently released by the Department of Commerce showing that now the production of inedible tallow, about the last and main soap fat, is lagging behind consumption by 35 million pounds. Stocks consequently are melting down rapidly as this condition continues. Stocks of animal fats and oils showed a reduction of 223 million pounds at the end of 1942 below the figure for 1941.

Flaxseed, whose activity is curtailed for want of a ceiling, has had its prospective 1943 production goal lifted a half million acres to 5.5 acres by the Department of Agriculture, according to its latest bulletin on fats and oils. This will help to bring the expected total fats and oil production from domestic material in 1943 to 11.7 billion pounds as against 10.1 billion pounds in 1942. Animal fat production, says the bulletin, will probably reach 7.5 billion pounds as compared with 6.9 billion pounds in 1942.

One of the interesting facts brought out recently by the Department of Commerce report on the fats and oils situation was the increase in production of crude coconut oil in January, 1943, over December, 1942. Factory and warehouse stocks rose proportionately as consumption fell. Stocks at the end of January were reported to be 136,684,000 pounds.

ISSUE NEW FAT, OIL ORDER

An order to supersede WPB Order M-71, fixing quotas for oil and fat consumption by soap makers and other industrial fat and oil users, has just been issued by the Food Distribution Administration. Known as FDO 42, the principal change which it embodies so far as soap makers are concerned, is a reduction in the quota of vegetable oil foots and fatty acids from 150 to 100% of base period usage. The permissible quota on soap makers' use of primary fats and oils is unchanged at 84%. The FDA has also issued another "take over order" FDO 40, continuing the restrictions which WPB Order M-60 imposed on use of coconut, babassu, palm kernel and other high lauric acid content oils.

An added burden on the supply of fatty acids is expected as a result of the recent Petroleum Administration Order No. 10, which limits the amount of fatty oils in the manufacture of certain lubricating grease and requires the substitution to the greatest extent possible of fatty acids for fatty oils. Fatty acids sales have been limited by lack of adequate supplies of raw materials, although the price structure remained fairly stable.

Flaxseed from the Argentine is reported coming in to the United States once more in amounts giving rise to the belief that domestic supplies may be thus supplemented. However, with shipping conditions being what they are, and predictions that the month just past was one of the worst from point of U-boat sinkings, the tendency is to discount reports of large flaxseed imports.

Cresylic acid has sprung back into the news once again. This time there is talk of relaxing the ceiling to stimulate British producers to offer more material. With consumption of the domestic product almost at the absorption point, there is not enough of the material to fill all demands. Therefore, it is felt to be to our interest to make it worthwhile for the British product to be brought into the United States to supplement the small amount currently afloat.

Dollars and cents prices have just been set on the following fine chemicals: salicylic acid, vanillin and coumarin. The prices set by the former price schedules for salicylic continue, except that reductions have been ordered in the markup permitted resellers for large quantity sales. On vanillin, the maximum price for eugenol vanillin reflects a differential of 25 cents per pound above the price for the other two types: lignin vanillin and guaiacol vanillin. Prices prevailing October 1-15, 1941 are set as the maximum for coumarin.

No further official word has come through as yet on the expected amendment to the pyrethrum order, although the amendment should be released within the next few days.

Available NOW!

SCHUNDLER BENTONITE

is ready for immediate shipment without priority rating . . .

Schundler Bentonite, known as the "clay of 1,000 uses" is ready for immediate shipment without priority rating. It is plentiful and is not on the list of critical materials. Prompt shipments are being made without "red tape."

AN IDEAL "SUBSTITUTE"

As a "substitute" or alternate for other materials—which may be scarce now—Schundler Bentonite is an ideal material used either alone or in combination. Investigate its application to your problem today.

" . . . . . 1,000 USES"

A few typical uses of Schundler Bentonite are: Purification of water supplies . . . Insulation blocks, plasters and cements . . . In Ceramic bodies to improve the green strength of lean clays and the quality of fired products . . . In Rubber latex adhesives . . . Emulsions and aqueous suspensions of bitumens . . . Compounds for machining and drawing metals . . . Polishes and cleaners . . . Adhesives and sizings in combination with starches . . . Pharmaceuticals and cosmetics . . . Paper manufacture to inhibit gumming of screens . . . Fluxing compounds for arc welding . . . Coating walls of asphalt containers.

TECHNICAL SERVICE INCLUDED

Schundler technical service goes with every order for Schundler Bentonite . . . a service backed by the largest scientific staff working in the best equipped laboratory in the Bentonite industry. Your inquiries are invited.

F. E. SCHUNDLER & CO., INC.

528 RAILROAD ST.
JOLIET, ILLINOIS

Schundler

KRANICH

WAR shortages are bringing about many changes in our line of soaps for jobbers and converters. Fortunately, our many years of experience in the manufacture of quality soaps enable us to make these changes with the minimum inconvenience to our customers. Every possible effort is being made to maintain the quality of KRANICH soaps.

To protect our regular customers we are filling orders on many hard-to-get products on the basis of former purchases. We know you will appreciate the fairness of such a policy.

Plan to consult KRANICH regarding your supply problems. — We may be able to help.

Shampoo

Liquid Castile Soap

•

Powdered Soap

U. S. P. Castile (Only)

•

Potash Soaps

Soft Potash 40%
U. S. P. XII Green

•

KRANICH SOAP COMPANY

55 Richards St. Brooklyn, N. Y.

SOAPS

PRICES

(As of March 30, 1943)

Minimum Prices are for car lots and large quantities. Price range represents variation in quotations from different suppliers and for varying quantities.

Chemicals

Acetone, C. P., drums	lb.	$ .08½	$ .09
Acid, Boric, bbls., 99½%	ton	109.00	131.00
Cresylic, drums	gal.	.81	.83
Low boiling grade	gal.	.81	.83
Muriatic, C. P., carboys	lb.	.06½	—
Oxalic, bbls.	lb.	.11¼	.12½
Alcohol, Ethyl, drums	gal.	11.99	12.05½
Complete Denat., SD1, dms., ex.	gal.	.62	.67
Alum. Potash lump, bbls.	lb.	.04½	—
Ammonia Water, 26°, drums	lb.	.02¼	.02½
Ammonium Carbonate, tech., drums	lb.	.08½	.09¼
Bentonite	ton	25.00	51.00
Bleaching Powder, drums	100 lb.	2.50	3.60
Borax, pd., bbls., bags	ton	50.00	66.00
Carbon Tetrachloride, car lots	gal.	.73	1.17
L. C. L.	gal.	.80	1.27
Cresol, U.S.P., drums	lb.	.10¾	.11¼
Cresote Oil	gal.	.141	.15½
Feldspar, works	ton	17.00	19.00
Formaldehyde, bbls.	lb.	.05½	.06¼
Fullers Earth	ton	8.50	15.00
Glycerine, C.P., drums	lb.	.18¾	.19¼
Dynamite, drums	lb.	.18¼	.18¾
Saponification, drums	lb.	.12¾	.14¾
Soap lye, drums	lb.	.11½	—
Lanolin, U.S.P., hydrous, drums	lb.	.29	.32
Anhydrous, drums	lb.	.30	.33
Lime, live, bbls.	ton	6.25	16.00
Mercury Bichloride, drums	lb.	2.24	2.39
Naphthalene, ref. flakes, bbls.	lb.	.08	.08½
Orthodichlorbenzene	lb.	.06	.08½
Paradichlorbenzene, drums	lb.	.11	.15
Petrolatum, bbls. (as to color)	lb.	.03⅜	.07¼
Phenol (Carbolic Acid) drums	lb.	.10½	.11¼
Pine Oil, drums	gal.	.55	—
Potash, Caustic, solid	lb.	.06¼	.06¾
Flake, 88-92%	lb.	.07	.07½
Liquid, 45% basis	lb.	.03¼	.03½
Potassium Carbonate, solid	lb.	.06½	.06¾
Liquid	lb.	.03	.03½
Pumice Stone, coarse	lb.	.03⅞	.045
Rosins (net. wt., ex dock, New York)—			
Grade D to H	100 lb.	3.72	4.18
Grade I to N.	100 lb.	4.20	4.50
Grade WG to X	100 lb.	5.44	5.65
Rotten Stone, dom., bags	lb.	.0128	.019
Silica	ton	17.00	27.00
Soaps—			
Tallow Chip, 88%	lb.	.11	.11⅝
Powder, 92%	lb.	.11⅜	.12
Powdered, White Neutral	lb.	.25½	.42
Olive Oil Paste	lb.	.40	—
Shampoo Base	lb.	.18	.20
Liquid Concentrate, 30-32%	gal.	.75	.79
Soda Ash, cont., wks., bags, bbls.	100 lb.	1.15	3.25
Car lots, in bulk	100 lb.	.90	—
Soda Caustic, cont., wks., solid	100 lb.	2.30	3.15
Flake	100 lb.	2.95	3.55
Liquid, tanks, 47-49%	100 lb.	1.92½	1.95
Soda Sal., bbls.	100 lb.	1.20	1.40
Sodium Chloride (Salt)	ton	14.20	18.00
Sodium Fluoride, bbls.	lb.	.08	.08½
Sodium Bisulfate	100 lb.	2.25	2.50
Sodium Metasilicate, anhyd.	100 lb.	4.00	5.30
Granulated	100 lb.	2.50	3.55
Sodium Pyrophosphate	100 lb.	5.28	6.80
Sodium Silicate, 40 deg., drum	100 lb.	.80	1.20
Drums, 52 deg. wks	100 lb.	1.40	1.80
Tar Acid Oils, 15-25%	gal.	.27½	.33½
Triethanolamine	lb.	.19	.20
Trisodium Phosphate, bags, bbls.	100 lb.	2.70	4.15

Oils — Fats — Greases

Babassu, tanks, futures	lb.	.1110	Nom.
Castor, No. 1, bbls.	lb.	.15¼	.16
No. 3, bbls.	lb.	.13¾	.14¼
Coconut (without excise tax)			
Manila, tanks, N. Y.	lb.	No Prices	
Tanks, Pacific Coast, futures	lb.	No Prices	
Copra, bulk, coast	lb.	No Prices	
Corn, tanks, West	lb.	.12¾	.15½
Cottonseed, crude, tanks, mill	lb.	.12¾	—
PSY, futures	lb.	.13⅞	.14⅛
Fatty Acids—			
Corn Oil, tanks, Chicago	lb.	.14	.14½
Coconut Oil, tanks, Twitchell, Chi.	lb	.17½	.18
Cotton Oil, tanks, Chicago	lb.	.14	.14½
Settled soap stock, Chicago	lb.	.03⅞	.04
Boiled soap stock, 65%, Chi.	lb.	.04⅞	.05
Foots, 50%, Chicago	lb.	.03½	.03¾
Castor Oil, split, tanks, N. Y.	lb.	.20¾	.21¼
Linseed Oil, split, tanks, N. Y.	lb.	.18½	—
Distilled	lb.	.21	.21½
Myristic acid, distilled, tanks, N.Y.	lb.	.19	.19½
Palm Oil, white tanks, N. Y.	lb.	No Prices	
Single distilled	lb.	No Prices	
Soybean Oil, split, tanks, N. Y.	lb.	.1175	—
Distilled	lb.	.1389	.1400
Red Oils, bbls., dist. or sapon	lb.	.1325	.1425
Tanks	lb.	.12½	—
Stearic Acid, saponif.			
Double pressed	lb.	.15	.16
Triple pressed	lb.	.18	.19
Greases, choice white, tanks	lb.	.08⅞	—
Yellow	lb.	.08⅝	—
Lard, city, tubs	lb.	.1380	—
Linseed, raw, bbl.	lb.	.1540	.1560
Tanks, raw	lb.	.1500	.1520
Olive, denatured, bbls., N. Y.	gal.	3.75	4.00
Foots, bbls., N. Y.	lb.	.19	Nom.
Palm, Sumatra, cif. New York, tanks	lb.	No Prices	
African, tanks, ex. ship	lb.	.08¼	Nom.
Palm, kernel	lb.	No Prices	
Peanut, crude, tanks, mill	lb.	.13	Nom.
Soya Bean, domestic, tanks, crude	lb.	.11¾	Nom.
Stearin, oleo, bbls.	lb.	.1061	—
Tallow, special, f.o.b. N. Y.	lb.	.08½	—
City, ex. loose, f.o.b. N. Y.	lb.	.08⅝	—
Teaseed Oil, crude	lb.	.29	Nom.

ACKNOWLEDGED HIGHEST QUALITIES

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Check this table comparing Valencia with the highest grade of imported Italian Pumice. See for yourself that Valencia is truly the standard of American Pumice.

	American Pulverized Per Cent	Italian Select Per Cent
Silica	72.90	73.24
Alumina	11.28	10.61
Iron Oxide	.86	1.57
Titanium Oxide	.06	.10
Calcium Oxide	.80	1.10
Magnesium Oxide	.36	.40
Soda	3.64	3.03
Potash	4.38	5.58
Sulphuric Anhydride	.03	.05
Loss on ignition	5.20	4.04

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(As of March 30, 1943)

Essential Oils

Almond, Bitter, Artificial	lb.	$3.50	$3.75
Bitter, F.F.P.A.	lb.	4.75	5.00
Sweet, cans	lb.	1.85	1.95
Anise, cans, U.S.P.	lb.	3.25	3.60
Bay, 55-66% phenols, cans	lb.	1.60	2.10
Bergamot, coppers	lb.	32.00	Nom.
Artificial	lb.	2.25	6.50
Birch Tar, rect., cans	lb.	—	—
Crude, cans	lb.	—	—
Bois de Rose, Brazilian	lb.	4.75	5.00
Cayenne	lb.	—	—
Cade (juniper tar), drums	lb.	1.50	Nom.
Cajeput, tech., drums	lb.	—	2.10
Calamus, cans	lb.	—	—
Camphor, Sassy, drums	lb.	—	—
White, drums	lb.	—	—
Cananga, native, cans	lb.	17.00	17.50
Rectified, cans	lb.	18.25	20.00
Cassia, Redistilled, U.S.P.	lb.	10.50	12.00
Cedar Leaf, cans	lb.	1.05	1.35
Cedar Wood, light, drums	lb.	.75	1.00
Citronella, Java, drums	lb.	—	—
Citronella, Ceylon, drums	lb.	1.20	1.40
Clove, U.S.P., cans	lb.	1.80	2.00
Eucalyptus, Austl., U.S.P., cans	lb.	1.15	1.40
Fennel, sweet, cans	lb.	3.60	—
Geranium, African, cans	lb.	30.00	Nom.
Bourbon, cans	lb.	24.00	—
Turkish (Palmarosa)	lb.	5.25	5.50
Hemlock, cans	lb.	1.20	1.25
Lavender, 30-32% ester, cans	lb.	9.00	9.25
Spike, Spanish, cans	lb.	4.25	4.35
Lemon, Ital., U.S.P.	lb.	—	Nom.
Cal.	lb.	3.00	—
Lemongrass, native, cans	lb.	2.65	2.75
Linaloe, Mex., cases	lb.	4.25	—
Nutmeg, U.S.P., cans	lb.	5.25	5.50
Orange, Sweet, W. Ind., cans	lb.	6.00	6.25
Italian cop	lb.	8.00	Nom.
Distilled	lb.	1.00	—
California, expressed	lb.	1.60	—
Origanum, cans, tech.	lb.	2.75	2.90
Patchouli	lb.	8.00	8.50
Pennyroyal, dom.	lb.	—	—
Imported	lb.	3.15	3.25
Peppermint, nat., cans	lb.	5.50	5.75
Redis., U.S.P., cans	lb.	6.00	6.25
Petitgrain, S. A., cans	lb.	1.95	2.20
Pine Needle, Siberian	lb.	3.00	3.25
Rosemary, Spanish, cans	lb.	2.25	2.30
drums	lb.	2.10	2.15
Sandalwood, dom., dist., U.S.P.	lb.	5.85	6.25
Sassafras, U.S.P.	lb.	2.00	2.20
Artificial, drums	lb.	2.00	—
Spearmint, U.S.P.	lb.	—	3.40
Thyme, red, N. F.	lb.	3.25	3.50
White, N. F.	lb.	3.50	3.75
Vetiver, Java	lb.	42.00	50.00
Ylang Ylang, Bourbon	lb.	—	—

Aromatic Chemicals

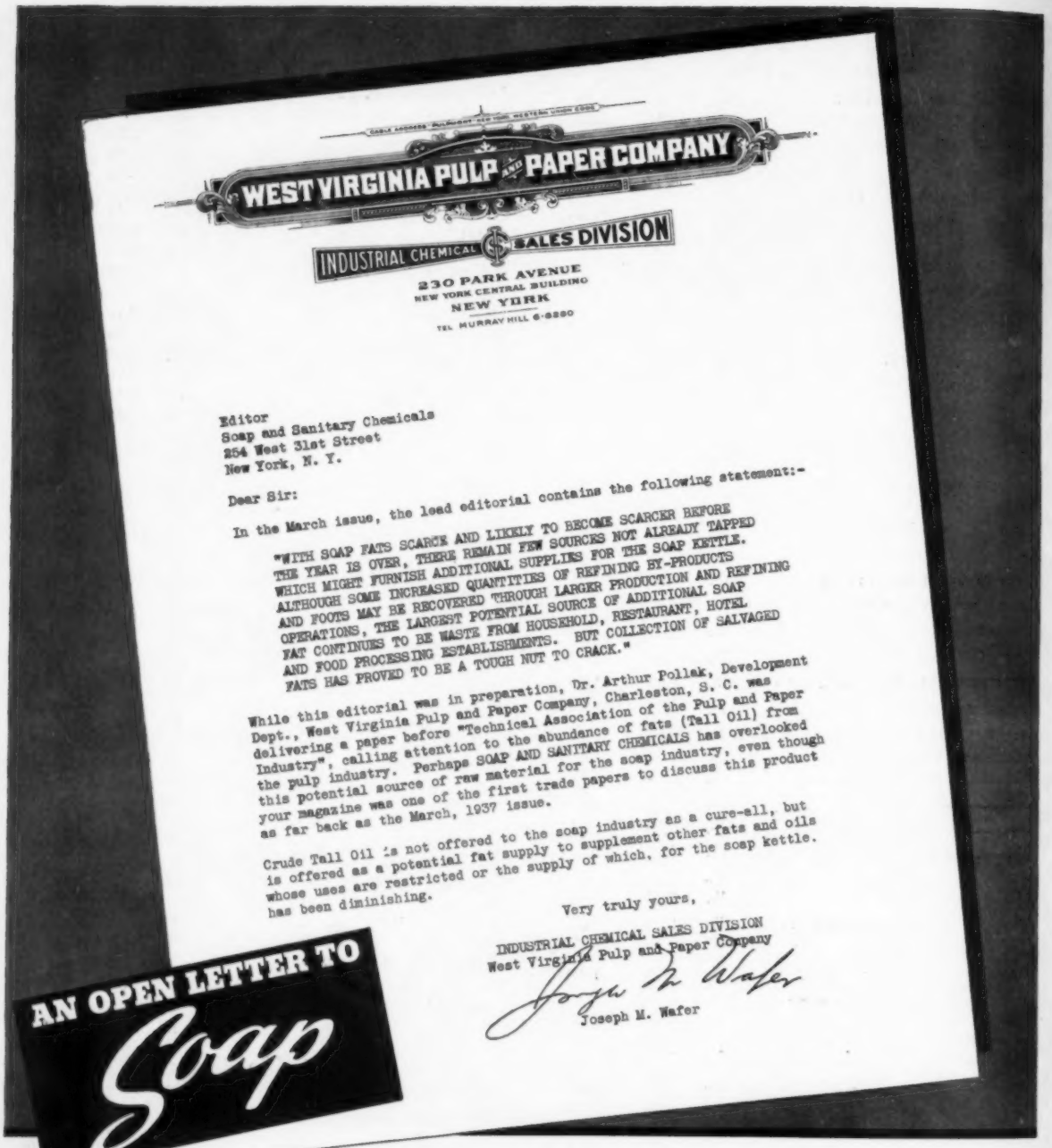
Acetophenone, C. P.	lb.	$1.55	$1.60
Amyl Cinnamic Aldehyde	lb.	—	—
Anethol	lb.	2.25	2.40
Benzaldehyde, tech.	lb.	.45	.55
N. F. VI	lb.	.85	2.75
Benzyl, Acetate	lb.	.59	Nom.
Alcohol	lb.	.63	.75
Citral	lb.	5.50	7.00
Citronellal	lb.	2.75	3.25
Citronellol	lb.	7.00	7.25
Citronellyl Acetate	lb.	—	—
Coumarin	lb.	2.75	3.25
Diphenyl oxide	lb.	.43	.50
Eucalyptol, U.S.P.	lb.	2.40	2.75
Eugenol, U.S.P.	lb.	2.75	2.80
Geraniol, Soap	lb.	2.50	3.00
Other grades	lb.	3.50	4.00
Geranyl Acetate	lb.	—	—
Heliotropin	lb.	5.25	Nom.
Hydroxycitronellal	lb.	7.25	8.75
Indol, C. P.	lb.	28.00	30.00
Ionone	lb.	2.75	3.95
Isoborneol	lb.	.81	.90
Iso-bornyl acetate	lb.	.80	.95
Iso-Eugenol	lb.	—	—
Linolool	lb.	6.75	7.00
Linalyl Acetate	lb.	5.50	7.25
Menthol, natural	lb.	—	—
Synthetic, U.S.P.	lb.	13.00	19.00
Methyl Acetophenone	lb.	—	—
Anthranilate	lb.	2.20	2.35
Paracresol	lb.	—	—
Salicylate, U.S.P.	lb.	.35	.40
Musk Ambrette	lb.	4.00	4.45
Ketone	lb.	4.15	4.60
Xylol	lb.	1.40	1.80
Phenylacetaldehyde	lb.	5.00	6.00
Phenylacetic Acid	lb.	1.85	1.90
Phenylethyl Alcohol	lb.	2.10	2.50
Rhodinol	lb.	—	—
Safrol	lb.	2.25	2.45
Terpineol, C.P., dra.	lb.	.40	—
Cans	lb.	.43	—
Terpinyl Acetate, 25 lb. cans	lb.	.87	—
Thymol, U.S.P.	lb.	3.00	Nom.
Vanillin, U.S.P.	lb.	2.35	2.75
Yara Yara	lb.	1.80	1.85

Insecticide Materials

Insect Powder, bbls.	lb.	.29	.30
Pyrethrum Extract			
20 to 1	gal.	5.90	6.00
30 to 1	gal.	8.85	9.00
Derris, powder—4%	lb.	.31	—
Derris, powder—5%	lb.	.35	—
Cube, powder—4%	lb.	.31	—
Cube, powder—5%	lb.	.35	—
Squill, red, dried	lb.	.85	1.00

Waxes

Bees, white	lb.	.57	.63
African, bgs.	lb.	.3750	—
Refined, yel.	lb.	.5250	.6050
Candelilla, bgs. (crude)	lb.	.38	—
Carnauba, No. 1, yellow	lb.	.8325	.8925
No. 2, N. C.	lb.	.7575	.8175
No. 3, Chalky	lb.	.7125	.7725
Ceresin, yellow	lb.	.13½	.18
Montan Wax, bags	lb.	.45	.46
Paraffin, ref., 125-130	lb.	.0520	.0560


WEST VIRGINIA PULP AND PAPER COMPANY
INDUSTRIAL CHEMICAL SALES DIVISION
230 PARK AVENUE
NEW YORK CENTRAL BUILDING
NEW YORK
TEL. MURRAY HILL 6-8880
Editor
Soap and Sanitary Chemicals
254 West 31st Street
New York, N. Y.
Dear Sir:
In the March issue, the lead editorial contains the following statement:-
"WITH SOAP FATS SCARCE AND LIKELY TO BECOME SCARCER BEFORE THE YEAR IS OVER, THERE REMAIN FEW SOURCES NOT ALREADY TAPPED WHICH MIGHT FURNISH ADDITIONAL SUPPLIES FOR THE SOAP KETTLE. ALTHOUGH SOME INCREASED QUANTITIES OF REFINING BY-PRODUCTS AND FOOTS MAY BE RECOVERED THROUGH LARGER PRODUCTION AND REFINING OPERATIONS, THE LARGEST POTENTIAL SOURCE OF ADDITIONAL SOAP FAT CONTINUES TO BE WASTE FROM HOUSEHOLD, RESTAURANT, HOTEL AND FOOD PROCESSING ESTABLISHMENTS. BUT COLLECTION OF SALVAGED FATS HAS PROVED TO BE A TOUGH NUT TO CRACK."
While this editorial was in preparation, Dr. Arthur Pollak, Development Dept., West Virginia Pulp and Paper Company, Charleston, S. C. was delivering a paper before "Technical Association of the Pulp and Paper Industry", calling attention to the abundance of fats (Tall Oil) from the pulp industry. Perhaps SOAP AND SANITARY CHEMICALS has overlooked this potential source of raw material for the soap industry, even though your magazine was one of the first trade papers to discuss this product as far back as the March, 1937 issue.
Crude Tall Oil is not offered to the soap industry as a cure-all, but is offered as a potential fat supply to supplement other fats and oils whose uses are restricted or the supply of which, for the soap kettle, has been diminishing.
Very truly yours,
INDUSTRIAL CHEMICAL SALES DIVISION
West Virginia Pulp and Paper Company
Joseph M. Wafer
AN OPEN LETTER TO
Soap

LIQRO *Range of Analyses*

PHYSICAL DATA	
Specific Gravity 60°F/60°F	**0.97-0.99**
Pour point, not over, °F	45
Viscosity—Saybolt Universal at 210°F—Seconds	95-120
Flash Point, °F	350-370
Fire Point, °F	410-430
Color	**Brown**
Moisture—Less than, %	**0.4**

CHEMICAL DATA	
Acid Number	**160-170**
Saponification Number	**165-175**
Rosin Acids Number	**80-90**
Iodine Number (Wijs)	**140-150**
Ash—Less than, %	**0.4**

ANALYSIS	
Fatty Acids, %	**45-50**
Rosin Acids, % Calc. as Abietic	**42-48**
Sterols, Higher Alcohols, etc., %	**6-9**

NUCHAR

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PRODUCTION SECTION

A section of SOAP devoted to the technology of oils, fats, and soaps published prior to Jan. 1, 1932, as a separate magazine under the title, Oil & Fat Industries.

Soap and Dermatitis

THE role of soap in dermatology is treated by Dr. Herman Sharlit of New York, in an article "Soap and the Soap Problem" appearing in the January 15 issue of the *New York State Journal of Medicine*. The author emphasizes that an overwhelming majority of people who have healthy skin find the average toilet soap completely safe, but points out that there is a sizable group, composed largely of women, who find that the use of soap leaves the skin too dry, and its surface flaky or irritated.

Alkalinity has long been regarded, said Dr. Sharlit "as the fundamental cause for the adverse skin reaction in these cases. Using a solution of 1 per cent in distilled water, I have tested many toilet soaps and found them all to have a pH between 9 and 10. This is true for the so-called superfatted soap and for the laundry soap also. However, since this range of alkalinity is too feeble to act as an effective keratolytic during the momentary exposures required for ordinary cleansing of the skin, damage will occur only if the alkalinity is transmitted through the horny surface of the skin to the epithelial layer below. I have attempted to probe this thought by dialysis experiments with soap solutions. The results of these tests are given in Table 1.

"Using both 'gut' and collodion bag membranes and dialyzing 1 per cent solution of soap against distilled water, tests on the diffusates after one hour and also after 18 hours of dialysis reveal that all toilet soaps fail to communicate the full strength of their alkalinity through the membrane but that laundry soaps have that tendency.

"Since clinical experience points to a greater risk of dermatiitis from laundry soap, one may continue to suspect, at least on the basis of these tests, that the alkalinity of these soap solutions plays a part in the production of the dermatitis. By the same token, however, we may believe that alkalinity does not enter as a factor in the production of dermatitis from toilet soap. I make these deductions from the tests with full knowledge that the keratin of the skin surface is not completely comparable as a membrane barrier to those employed in the tests. The point I wish to stress is that the risk of damage from the alkalinity of soap occurs only when that alkalinity is made available beneath the horny layer of the skin. Soap manufacturers who boast of the absence of 'free alkali' in their toilet soaps should demonstrate by some such test as here recorded the degree of alkalinity liable to diffusion through the horny layer of the skin. I see no good reason for suspecting that a satisfactory laundry soap cannot also be achieved, a laundry soap whose diffusible 'alkali' will not exceed that of toilet soap.

"The other side of the picture of toilet soap dermatitis is the role that the fatty acids may play in its production. The literature records many cases of soap dermatitis due to sensitization to specific fatty acids in soaps. These soap allergies are in the same category as the disabilities arising from the perfumes in soaps and have been in the chief background for the introduction of soap substitutes. Essentially, these substitutes have been of two varieties: wetting-agent compound products and hydrophylic oils—that is, oils miscible with water.

"I am strongly opposed to the use of the former type of soap substitutes, on the grounds that wetting-agents are known to increase the permeability of the keratin surface of the skin. One need not dwell on the potential dangers from such a change. The use of this type of cleansing agent would increase the incidence of dermatitis venenata and contact allergies in the group who practice this form of skin cleansing.

"The hydrophilic oils are more acceptable substitutes, although they, too, are found irritating to skin in some cases, and are not as satisfactory cleansers as soap. Because they are not soap and fail to give the satisfaction that goes with cleansing by a heavy lather emulsion, they will displace soap only when all soaps have proved deleterious

and this personal experience or professional advice makes a substitute for soap imperative. This still provides the inspiration to study variations in soap mixtures for at least a partial solution of the 'soap problem.'

"Such a partial solution has been offered in superfatted soap. It is difficult to judge the degree of success achieved, chiefly because in the many products available the amount and character of the superfatting cover a wide range and the investigator is usually in the dark as to the exact nature of the soap mixture studied. Furthermore, some dermatologists assume that superfatting aims at overcoming the excessive defatting of the skin by the detergent action of soap but that it fails in this purpose, since one cannot expect to effect emollient and detergent action at one and the same time. This reasoning implies acceptance of the judgment that the too thorough detergence by soap may cause irritation of the skin. This may be true for the group who complain that soap dries and roughens their skin; at any rate, they definitely represent the ideal test group for the study of soap mixtures in the class of superfatted soaps.

"The 'soap habit' involves the use of soap in solid form and with good lathering properties, among other things, and the need for maintaining these qualities has effectively restricted variations in the character of the superfatting creams. Definitely, it has kept at a minimum the amount of added oil these mixtures could contain, since the soap must not only be solid but also must have adequate hardness. I feel that most superfatted soaps contain a minimum of added oil and that most superfatting is in the form of grease; by reason of this the complete possibilities of soap as a source of emollient agents has not as yet been canvassed.

"Pursuing this idea I enlisted the services of a soapmaker and a satisfactory soap was processed that contained over 10 per cent of free vegetable oil, was safe against rancidity, had excellent lathering properties even in hard water, was of satisfactory hardness, and contained a typical fragrance. This soap was tried on the group, chiefly women, who claimed that the skin of their faces and hands would not tolerate soap. Another dermatologist and I acquired clinical experience with this soap, and the responses from the group on which it was tried were completely satisfactory, though many in the group had tried superfatted soaps and had found them unsatisfactory. The subjects, in expressing satisfaction with this experimental soap, were impressed by its oily content and with the emollient action therefrom.

"On the basis of its content, this experimental soap may justly be called 'oleaginous soap,' in contrast to 'superfatted soap.' It is evident to me from this experience that much can yet be done by way of soap to help solve the 'soap problem'."

Tall Oil Fatty Acids

Tall oil is treated with alcohol so as to esterify the fatty acids present but not the resin acids. The resin acids can then be partly separated by fractional crystallization. The remaining resin acids can be treated with alkali to form a water-soluble soap, whose solution forms a separate phase from the immiscible fatty-acid esters. The two phases are separated. C. R. Brown and A. T. Scott, to The Sharples Corp. U. S. Patent No. 2,294,446.

Efficiency of Laundry Sours

The following table shows the relative souring power of a number of sours commonly used, as compared with that of 56 per cent acetic acid.

Sour	Relative Souring Power per pound
Acetic acid, 56%	1.0
Acetic acid, 99.5% (glacial)	1.77
Oxalic acid	1.70
Sodium acid fluoride	1.72
Ammonium acid fluoride	1.88
Sodium silicofluoride	2.28
Ammonium silicofluoride	2.41
Proprietary Compound A	2.17
Proprietary Compound B	2.30

The reagents used were of CP grade. The figures show fluoride sours, particularly silicofluorides, to be most suitable for use. F. W. Lyndon. *Laundry & Dry Cleaning J. of Canada* 23, No. 2, 11-12, 25-6 (1943).

Oil Bleaching

Refined oil to be bleached is treated with up to about 1 per cent of an activated adsorbent earth to effect partial decolorization. The solid adsorbent earth is separated from the oil, which is then heated to about 350-400°F. to effect a more complete decolorization. The heating is suitably under a vacuum with steam treatment for about 5 hours. Eddie C. Glenn, to Industrial Patents Corp. U. S. Patent No. 2,292,027.

Reclaim of Cleaning Fluids

Spent solvents such as those used for dry cleaning may be clarified and reclaimed by forcing the solvent upward through a confined body of a compounded mixture of isopropyl alcohol, water and a sulfated fatty-acid detergent condensed with monoethanolamine. This causes relatively heavy substances to remain in or float on the upper surface of the clarifying mixture, while the clarified solvent floats above the same. The clarified solvent may be decanted at a point some distance above the heavy substance. Colin C. Jones, to Chemical Reclaiming Sales Co. U. S. Patent No. 2,294,461.

TABLE 1—DIALYSIS EXPERIMENTS WITH SOAPS
(Using "Gut" and Collodion Bag Membranes)

Soap Sample	pH of 1% Soap Solution in Distilled Water	pH of Diffusate After 1 Hour of Dialysis	pH of Diffusate After 18 Hours of Dialysis
Laundry 1	10.0	10.0	10.0
Laundry 2	9.0	8.5	8.5
Laundry 3	9.5	7.5	9.0
Laundry 4	10.0	10.0	10.0
Toilet 1 (S)*	9.5	7.5	7.5
Toilet 2	9.2	7.5	7.5
Toilet 3 (S)	9.0	7.5	7.5
Toilet 4	9.0	7.5	7.5
Toilet 5 (S)	9.0	7.0	7.0
Toilet 6	9.2	7.0	7.0
Toilet 7	9.0	7.5	7.5
Toilet 8	9.5	7.5	7.5
Toilet 9 (S)	9.5	7.0	7.5
Toilet 10	9.5	7.5	8.0

*(S)—Superfatted.

Rapid Soap Manufacture

IN a rapid continuous process, the time required for soap making can be reduced from several days to one hour or less, and preferably to about 20 minutes. This reduces cost of manufacture by diminishing greatly the amount of heat required. In the older process of passing steam through fat and lye, a variable amount of steam condenses during the mixing, so that soaps produced from identical ingredients, will still vary in their proportion of water, salt, glycerine and caustic, resulting in variations in texture and other characteristics of the finished soap. This difficulty is avoided by mechanical mixing in an enclosed container of carefully controlled and uniform proportions of the various soap constituents. Fitting, resulting from a strong change, is also avoided.

To incorporate these features into soap manufacture, the constituents of the reaction mixture are vigorously agitated, with agitation continued after addition of the graining agent. The resulting mixture is continuously fed to a centrifugal separator following saponification and graining and while the soap-containing mass is in a condition in which the soap particles are uniformly distributed through the mass. In the centrifugal separator, the soap-containing mass is separated from the aqueous phase and each separately and continuously discharged from the zone of centrifugation. An aqueous liquid is mixed with the grained soap as the latter is discharged. The Sharples Corp. British Patent No. 549,387; through *Perfumery & Essential Oil Record* 34, 25 (1943).

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Soap Spotting

Trouble is occasionally encountered by the spotting of packed soap, particularly in tropical countries. Such spotting is produced by molds such as *Aspergillus niger*. Soap can become infected in different ways, the more obvious being by spore-laden air and by the use of contaminated wrapping paper; the size on the surface of the paper serves as an ideal medium for the growth of fungi under tropical conditions. Where danger of soap spotting exists, it is recommended to expose the wrappers to formaldehyde vapor in a sealed room for 48 hours before use. Inclusion of anti-oxidants or preservatives such as *para*-methyl hydroxy benzoate is an additional safeguard. *Am. Perfumer* 45, 49 (1943).

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Swedish Tall Oil

The Swedish chemical industry is now making the fullest possible use of the liquid rosin or tall oil obtained as a by-product in the manufacture of sulfate pulp from pine wood. The dark brown crude material is usually purified by distillation. The average yield of distillation products is about five per cent of fuel oil, 45 of fatty acids, 20 of solid rosin, and 30 per cent of pitch residue. The fatty-acid fraction, also termed refined tall oil, is used in making both hard and soft soaps. Sulfonated oils for the textile industry are also produced from the tall oil. *Chem. Trade J. & Chem. Engineer* 112, 81 (1943).

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Protective Creams

Innoxa Laboratories in England, where in peace time the care of beauty is the first interest, have turned their attention to the protection of the skin of industrial workers. A general type of cream, called the B.A. series, is designed to afford protection to the skin against materials immiscible with water, such as grease, paint, varnish, solvents, etc. Creams in this series are elastic, easy to apply and to wash off, and economical in cost. The cream contains a non-conducting loading factor which tends to reduce the heat of the skin, making it suitable for workers employed on high-temperature processes. A "reconditioning" element comprises a saponified compound of cerostearates and a cholesterol absorption base, which serves as a repairing agent against moderate surface damage. The bacteriostatic value of the film has been determined by the agar cup method; the Rideal-Walker index is five.

To protect against irritants and abrasives soluble in or miscible with water, the B.W.N. series is used. These take a little longer to dry but are equally easy to remove with soap and water. B.W.N. 1 and 3 are used against irritants of an acid or neutral character, and for plating solutions, photographic chemicals, and oil-in-water emulsions. B.W.N. 2 and 4 are for dealing with alkalies, alkali soaps and explosives. The merits of these barrier creams have been endorsed by works medical officers and works managers in England. *The Chem. Age* 48, 223 (1943).

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Alkali Production

Wartime demands for chlorine were at a high point in 1942, requiring an output of chlorine that was almost one-third more than that of 1941. The result was a large increase in the production of electrolytic caustic soda. Total caustic production rose to about 18 per cent above the previous high of 1941. With only a slight rise in caustic consumption, nearly the entire production increase was added to stocks. In the case of soda ash, production in 1942 rose about 8 per cent, matched by use of this chemical in slightly greater proportion as compared with 1941. Chlorine production in 1942 is believed to have topped slightly 1,000,000 tons, compared with a total of 775,000 tons in 1941, and 635,000 tons in 1940. *Chem. & Met. Engineering* 50, No. 2, 104-5 (1943).

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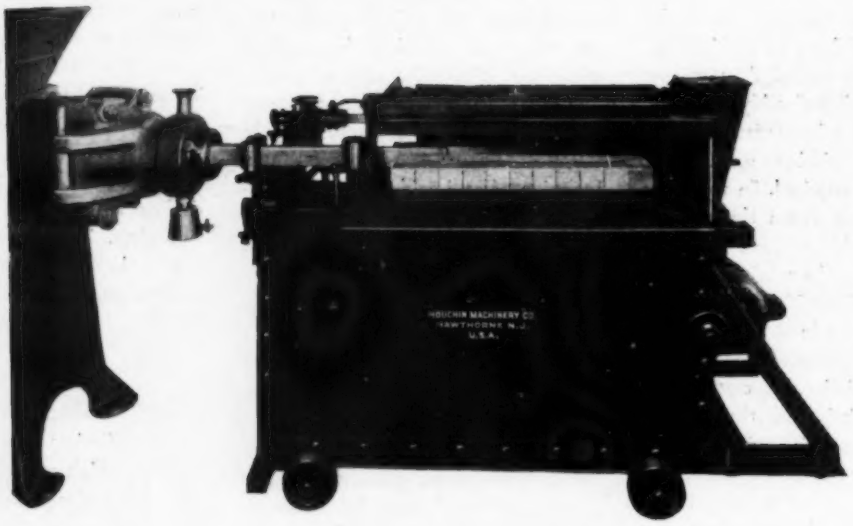
New Fatty Oil Source

Large amounts of seeds are available from the Puerto Rican guanabana fruit *Annona muricata* L. These seeds are a fairly promising source of oil and yield 23.9 per cent by acetone extraction. The percentage obtained by expression at 110° C. is somewhat lower. Characteristics of the oil are specific gravity 0.9178, Hanus iodine number 87.8, saponification number 197, acid value 2.29, and 1.02 per cent of unsaponifiable matter. Linolenic acid is absent. C. F. Asenjo and J. A. Goyco. *J. Am. Chem. Soc.* 65, 208-9 (1943).

SAVES PRICELESS MAN HOURS



AUTOMATIC TOILET SOAP CUTTER FOR BARS AND CAKES

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Cuts 3,000 pounds of soap an hour on a twenty-four-hours-a-day schedule.

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One or two bars cut at one time as required.

REPAIR PARTS AVAILABLE NOW

We can help our customers keep their soap machines at top efficiency with repair parts that may be required by them.

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MANUFACTURERS OF A FULL LINE OF SOAP MAKING EQUIPMENT

FIFTH AND VAN WINKLE AVENUES

HAWTHORNE NEW JERSEY

Soap Phase Diagrams

Vapor pressure data for a series of five pure soaps from sodium laurate through sodium stearate and oleate, with water, and for a typical commercial soap, have been made the basis of a revision of the less complete phase diagrams previously developed in investigations by many different methods. The best binary phase diagrams of the six soap systems, utilizing all available information, are given.

For reference some of the chief values are assembled in the table below. The temperature of ready solubility, T_s, is the temperature at which a soap rather suddenly becomes highly soluble, usually 20-30 per cent. At a few degrees lower, its solubility is only slight. It is also the lowest temperature for the existence of middle soap, since a tie line of constant temperature connects the lowest right-hand corner of the middle soap field with the lower left-hand corner of isotropic solution. For sodium salts of most commercial oils and fats, the temperature of ready solubility lies between 45 and 55° C. James W. McBain and Will Win Lee. *Oil & Soap* 20, 17-25 (1943).

Soap	Ready Soln. Ts	Lowest T or Tc for 70% neat	Lowest T for neat T	% Soap	Left or Tc Boundary for neat at 100° C. % Soap	% Humidity
NaL	42°	76°	62°	58%	80%	73%
NaM	60	84	70	51	79	77
NaP	71	88	80	63	78	79
NaStr	77	91	83	50	79	82
NaOl	32	43	34	61	86	69
Toilet	49	60	51	58	85	65

Fatty Acid Separation

To separate mixed solid fatty acids such as those derived from tallow and garbage grease, from liquid fatty acids, as for example the separation of stearic from oleic acid, the fatty acids are dissolved in aqueous methanol, the water content of which does not exceed 15 per cent. The concentration of the mixed fatty acids in the alcohol should not exceed 30 per cent by weight of the solvent solution. The solution is chilled to cause precipitation of crystals which consist predominantly of stearic acid. The fatty acids are then recovered. L. D. Myers and V. J. Muckerheide. U. S. Patent No. 2,293,676.

Nickel Formate Catalyst

The activity of a 20 per cent nickel formate-kieselguhr catalyst was studied by the hydrogenation of peanut oil by the continuous method. The velocity coefficients for the catalyst reduced at 200, 300 and 400°C. show that the optimum temperature for hydrogenation is the same as in the case of other nickel catalysts, being 300°C. The catalyst then exhibits activity approximately only half of that of the carbonate catalyst. The higher activity of the carbonate catalyst has been shown to be due to the bulky nature of the precipitate. R. V. Joglekar and S. K. K. Jatkar. *J. Indian Chem. Soc.*, Ind. & News Ed. 5, 4-7; through *Chem. Abs.*

Tall Oil Separation

Selective esterification of the fatty ingredients of tall oil is effected by use of a crude commercial wood alcohol in the presence of an inorganic acid such as hydrochloric, and an aldehyde such as formaldehyde. The resultant insoluble ester-resin-acid complex is then separated from the residual solvent, as by adding water and permitting stratification. Isador Miller. U. S. Patent No. 2,291,824.

Stabilizing Soap

Stabilization of a soap against deterioration and rancidity development is effected by the incorporation of 0.01-1 per cent of an alkali metal, ammonium, mercury, alkyl or guanidine thiocyanate, or an aryl mustard oil. George D. Martin, to Monsanto Chemical Co. U. S. Patent No. 2,293,350.

Selective Hydrogenation

Olive oil can be selectively hydrogenated with the aid of a copper-nickel-kieselguhr catalyst so that all of the linoleic acid is hydrogenated, leaving only oleic acid and the saturated acids originally present. Andrea Paleni. *Chimica e industria* (Italy) 24, 3-5; through Chem. Abs.

SOAP PERFUMING—1943 STYLE

Over the past year or two changes have been dictated in many soap formulas that had previously been unchanged for long periods. These changes have raised as many problems for the soap perfumer as they have for the soap maker. How soap perfuming problems have multiplied in recent months, in the face of such formula changes and shortages of many perfuming materials, and how these perfuming problems have been solved, will be covered in an early issue of SOAP & SANITARY CHEMICALS.

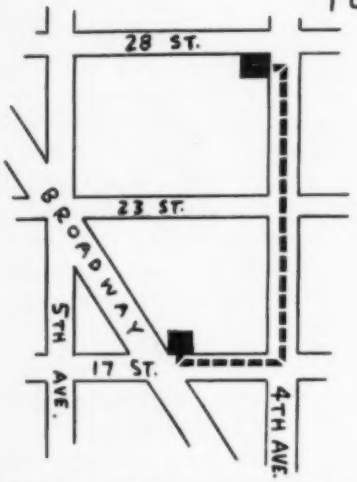
Sulfated Oils

The term "sulfonated oil" has been used for many years to designate oils of the glyceride type which have been treated with sulfuric acid to render them emulsifiable or soluble in water. Actually the reaction is not a true sulfonation and the term "sulfated" is now often employed. The process is quite complex, since the free hydroxyl groups on the glycerine arising from hydrolysis, also react. The following compares three types of sulfated oils used in leather and textiles. O. J. Schierholtz. *Can. Chem. & Proc. Industries* 27, No. 1, 44 (1943).

	Neatsfoot	*Codliver*	*Castor*
Specific gravity, 15.5°C.	0.990	0.990	1.016
Water, %	22.05	18.22	59.8
Total sulfates, %	4.26	4.30	3.14
SO_3 combined with oil, %	3.50	3.45	2.55
Total fatty oil	72.98	77.89	32.36
Ash, %	4.87	3.87	7.74
Sodium sulfate, %	4.87	3.65	5.50
Sodium chloride, %	0.0	0.0	0.59
Sodium carbonate, %	0.0	0.0	1.65

REMEMBER?

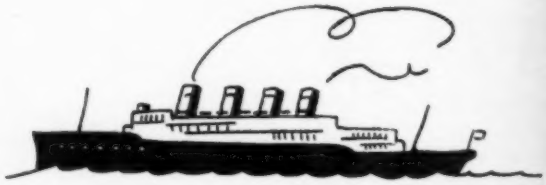
10 YEARS AGO



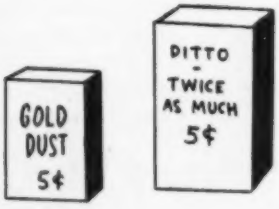
AASGP MOVED ITS OFFICES FROM EAST 17TH ST. TO 386 FOURTH AVE., NEW YORK

CECIL SMITH, YARDLEY & CO., ELECTED PRES. OF ASSOC. MFRS. OF TOILET ARTICLES, SUCCEEDING H.H. BERTRAM

ASSN. OF AMERICAN PRODUCERS OF DOMESTIC INEDIBLE FATS WAS FORMED. H.J. SCHULTE, DETROIT, WAS CHAIRMAN

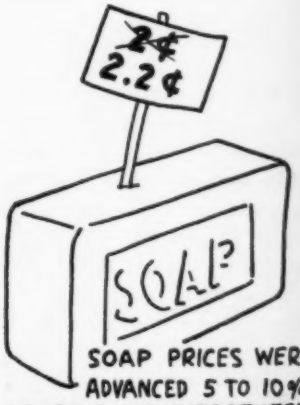


F. D'ARCY COOPER, CHAIRMAN OF LEVER BROS., LTD. ARRIVED ON THE AQUATANIA. HE SUGGESTED THAT ALL NATIONS LOWER TARIFFS 5% PER YEAR AS A MOVE TOWARD ECONOMIC RECOVERY



GOLD DUST OFFERED A DOUBLE SIZE PACKAGE AT THE REGULAR 5¢ PRICE

S. BAYARD COLGATE WAS ELECTED PRESIDENT OF CPP IN A WHOLESALE SHIFT IN THE FIRM'S MANAGEMENT



SOAP PRICES WERE ADVANCED 5 TO 10% BY LEADING MANUFACTURERS AND OTHERS FOLLOWED SUIT, WHEN ALL BUSINESS WAS VERY LOW

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U.S.I. CHEMICAL NEWS

April ★ A Monthly Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1943

Curbay B-G Helps Meet Egg and Meat War Effort Quotas

U.S.I.'s B-Complex Supplement Useful in Chick and Hog Feeds

55,000,000,000 eggs, 4,000,000,000 pounds of chicken meat and over 60,000,000 swine fed to 235 pound weight have been set by the Department of Agriculture as the 1943 quotas needed for support of the war effort. With these increased quotas set, Curbay B-G, U.S.I.'s riboflavin feed supplement, is taking on new importance as an aid in supplying the required units of the B-G complex essential in adequate poultry and hog rations.

Curbay B-G has, through the past years, demonstrated its effectiveness in replacing more expensive Vitamin B-Complex supplements — such as dried skim milk powder. The use of U.S.I.'s product has been responsible for releasing millions of pounds of dried skim milk powder for shipment to the United Nations for human food. Thus Curbay B-G represents a double contribution toward meeting increased food requirements.

Improved Moisture-Proofing Coating Composition Patented

WILMINGTON, Del. — A patent for making a moisture-proof coating composition said to have improved heat-sealing properties and anchorage was assigned recently to a company here.

Plasticizers of the ester type are condensed with resins, either natural, modified or synthetic. Dibutyl phthalate is said to be particularly advantageous as the plasticizer component. Mixing the condensation product with paraffin wax or nitrocellulose, suitable coating compositions are said to be obtained for moisture-proofing regenerated cellulose sheets and films.

The formula for a typical coating of this type is as follows:

	Parts
Nitrocellulose	40
Paraffin wax	2
Ethyl acetate	400
Toluene	160
Alkyd resin	10
Dibutyl phthalate	30

Color-Dispersing Process Prevents Haze in Films

ROCHESTER, N. Y. — A method for dispersing a coloring material in a water-swellable photographic colloid (such as gelatin) and maintaining the particle size small enough to prevent haze in the resulting film has been developed by two inventors here.

The coloring material is mixed with a water-insoluble material, such as collodion, in a common solvent, such as butyl acetate. This solution is then added to an aqueous one containing a dispersing agent. The mixture may next be passed through a small homogenizer and the suspension thus formed heated, preferably under vacuum, to remove the butyl acetate. Finally, the suspension of fine particles in the aqueous solution is added to a gelatin emulsion and, after mixing with it, the resulting emulsion is coated.

Acetoacetarylides Developed By U.S.I. for Research Study

Aid to Manufacturers in Meeting Post-War Needs Seen in Many New Dye Intermediates Produced on Laboratory Scale

Recognizing the growing importance of yellow pigments and dyestuffs, U.S.I. has developed a number of new acetoacetarylides on a laboratory scale in addition to the five now being produced commercially. Acetoacetarylides have proven particularly valuable in the production of the Hansa and newer yellows where an acetoacetarylide is coupled with a diazotized amino compound, preferably containing nitro groups which help to retain the insolubility in oil and thus prevent bleeding.

New impetus to acetoacetarylides as pigment dye intermediates has been brought about by the expanded utility of yellow pigment dyestuffs due to the absorption of chrome yellow production for olive drab pigments. In addition to the Hansa Yellows, toluidine and benzidine yellows have come into favor recently where color tone, brilliance and durability are desired.

New Acetoacetarylides

The heightened interest in acetoacetarylides has both brought about a greater demand for those compounds now commercially available and increased the desire to study new ones with a view to post-war applications. Among the newer acetoacetarylides developed by U.S.I. are the following:

- Acetoacet-para-phenetidide
- Benzoylacetanilide
- Diacetoacetyl-meta-toluylenediamine
- Diacetoacetyl-para-phenylenediamine
- Acetoacet-para-nitroanilide
- Acetoacet-2, 5-dichloroanilide
- Acetoacetyl-alpha-naphthylamine
- Acetoacetcumidide (pseudo)
- N,N'-Diacetoacetbenzidide
- Ortho-phenylacetoacetanilide

Sample quantities of these new compounds will be gladly sent upon request to manufacturers for laboratory experimentation.

(Continued on next page)

Thymolphthalein as Indicator In Red, Brown Titrations

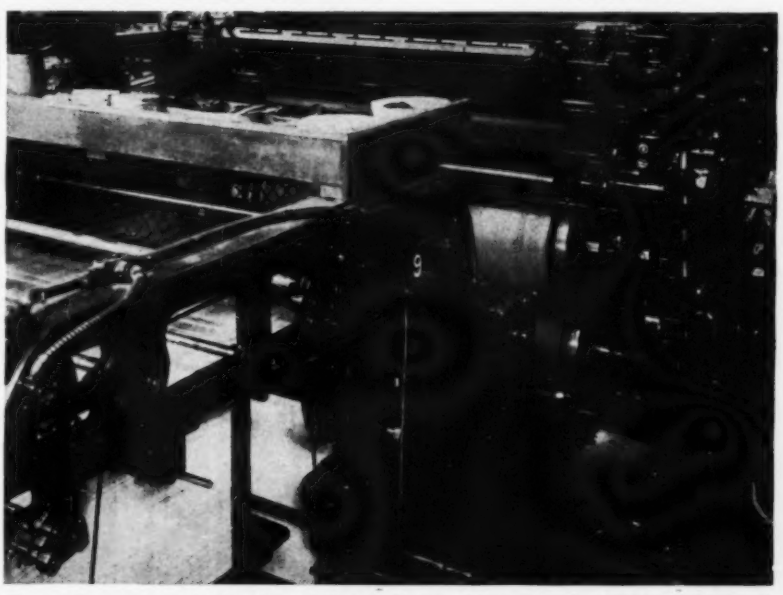
PROVIDENCE, R. I. — Thymolphthalein is a satisfactory indicator to use in titrating reddish or brownish solutions, where phenolphthalein and methyl orange are not satisfactory, according to findings reported recently in "The Chemist Analyst."

Thymolphthalein is said to change from colorless at pH of 9.3 to blue at 10.5. A convenient solution is described as containing 0.1% of the indicator in an 80% aqueous solution of ethanol.

Butanol Claimed to Stabilize Ethanol, Hydrocarbon Mixture

Butanol is a practical stabilizer for the preparation of a fuel mixture of hydrocarbons and ethanol of more than 188 proof, according to a recent report.

The addition of 5% butanol to ethanol of 192 proof, for example, is said to give mixtures stable at —15°. It is noted that the water-absorbing power increases with butanol at a greater rate than with ethanol. Practically, the sensitiveness is claimed to correspond to 19.4° per cc. of water added to 100 volumes of mixture.



The exacting requirements of modern printing provide one of the outstanding reasons for the use of the Hansa Yellows.

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April ★ **U.S.I. CHEMICAL NEWS** ★ 1943

New Reagent for Sodium Calls for Use of Ethanol

PRINCETON, N. J. — Systematic experiments have shown that a reagent for the determination of sodium can be produced through the use of ethanol. It is at the same time more insensitive toward lithium and more sensitive toward sodium than aqueous reagents now in common use, according to a chemist here.

The composition of this alcoholic reagent is as follows:

Uranyl acetate dihydrate	40 grams
Cupric acetate monohydrate	25 grams
Glacial acetic acid	100 ml.
Ethanol, 95%	500 ml.
Water	450 ml.

The salts are dissolved in the water and acetic acid at a temperature of 50° to 60° C. and, after cooling down to room temperature, the ethanol added with constant stirring. After standing at least one day, preferably two or three, the mixture is stirred and filtered in the same way as in the preparation of regular aqueous reagents.

Non-Leafing Aluminum Paste Does Not Require Grinding

LOUISVILLE, Ky. — A new non-leafing aluminum paste has been developed by an inventor here in which the deleafing action is brought about chemically without the need for grinding.

The preferred method of making this paste consists of adding to a regular, full leafing aluminum powder a suitable thinner or carrier in which has been incorporated a deleafing agent consisting of the highly polar active alcohols, esters, ketones, and aldehydes.

A typical formula calls for 60 pounds of aluminum powder (fully polished and leafing), 20 pounds of ethyl acetate and 20 pounds of toluol.

Ethyl Acetoacetate Used To Extract Lignin From Wood

Ethyl acetoacetate may be used as a solvent in the presence of hydrochloric acid to isolate lignin from white quebracho wood, according to a recent discovery.

Extension of lignin by this solvent is not quantitative, as determined by the König method, but the greater portion is isolated from the other components. A high hydrochloric acid concentration, 10% of the ethyl acetoacetate, and a temperature of 40° for 24 hours are said to give the best extraction.

New Acetoacetarylides

(Continued from previous page)

One of the most widely known of the acetoacetarylides now produced commercially by U.S.I. is acetoacetanilide. This compound is prepared by reacting ethyl acetoacetate, an important intermediate in dyestuffs and pharmaceuticals itself, with aniline thereby eliminating ethanol. Hansa Yellow G is formed when acetoacetanilide is coupled with diazotized meta-nitro-para-toluidine. The use of other diazotized amino compounds produces slightly different shades.

Other Compounds

Four other acetoacetarylides which may be used in the same general way to produce the desired shades of yellow are also commercially available from U.S.I. They are acetoacet-ortho-chloroanilide, acetoacet-para-chloroanilide, acetoacet-ortho-toluidide, and acetoacet-ortho-anisidide.

Dyestuff manufacturers are aided in obtaining the desired shade and clarity by the exacting production methods developed by U.S.I. which reduce impurities to extremely small limits. For although such factors as temperature, agitation, and drying time all play important roles in the ultimate clarity of yellow pigments, manufacturers have found through experience that the purity of the intermediates is of utmost importance.

Ethanol Aids Dispersement Of Vitamin Compositions

NEWARK, N. J. — By the use of ethanol as a solvent, an inventor here claims that fat-soluble vitamin compositions may be easily dispersed in aqueous media.

To produce this water-dispersible composition, the vitamin concentrate is mixed with a solution of ethanol and a substance selected from the group consisting of the alcohol-soluble portions of edible gums.

Starch Fractionated With Butanol, Isoamyl Alcohols

Butanol and isoamyl alcohols can be used to fractionate starch without retrogradation or hydrolytic degradation, it was reported recently. The precipitated fraction, which has a higher alkali number than the non-precipitated fraction, separates in the form of an addition compound with the butanol. The lower alcohols were ineffective, it is stated, while octyl alcohol and cyclohexanol precipitated all of the starch indiscriminately.

TECHNICAL DEVELOPMENTS

Further information on these items may be obtained by writing to U.S.I.

A slime-preventing chemical is offered in powdered form for addition to wood pulp in a beater. Five ounces of the chemical to one ton of pulp is said to be adequate. **(No. 680)**

U S I

A thermoplastic corrosion-proofing material has been developed as a substitute for rubber for lining tanks, pipes and pipe fittings. Black in color, it is applied in a similar manner to rubber. This product is claimed to resist attack by non-fuming nitric acid, chromic acid, alcohol, petroleum, gasoline, linseed oil, vegetable oil and soaps. **(No. 681)**

U S I

A cellulose paper-base medium is offered which, it is said, can be impregnated with glue and protein materials, rubber, rubber substitutes, and both natural and synthetic resins either with or without lamination. **(No. 682)**

U S I

An emulsifier has been put on the market which is described as a high dispersion product of oil in water and water in oil that is especially useful in the manufacture of paint products. **(No. 683)**

U S I

Skin protectors which the maker claims can be used on the face as well as the hands and arms have been developed to meet a wide variety of conditions. Among the irritants they are said to counter are cutting and lubricating oils, kerosene, petroleum, solvents, thinners, lacquer, paint, ink, water, fumes, ammonium nitrate, chlorine, acids, and alkalies. **(No. 684)**

U S I

A toxic preservative for cotton rope has been put on the market which is claimed to toughen and stiffen rope, give it wear-resistance and firmness, reduce unwinding of the strands, and generally increase its efficiency. **(No. 685)**

U S I

A new method of gas analysis has been developed in which catalysis is described as superseding slow combustion in standard gas analysis apparatus, thus providing a safer and more accurate method for determination of combustible components. **(No. 686)**

U S I

An adjustable automatic pipette is offered which is said to be equally adaptable to analytical procedures and to operations requiring rapid, accurate measurement of liquids. By a simple adjustment, it is claimed that any desired volume can be delivered within 0.1 ml. **(No. 687)**

U S I

An odor neutraliser for fly spray and disinfectant formulas is being produced which the maker says is an efficacious specific for Lethane 384, Lethane 384 Special, Thanite, Velsicol and Deodorant L-37 MM&R. **(No. 688)**

U S I

A viscometer is announced for testing polymer solutions and other heavy-bodied liquids. Viscosity is determined by inverting glass tubes and comparing the rise of an air bubble in the sample with the rise of a bubble in a tube containing a known standard. **(No. 689)**

U.S.I INDUSTRIAL CHEMICALS, INC.

60 EAST 42ND STREET, NEW YORK — CHEMICALS INDUSTRIAL ANTI- SOLVENTS ALCOHOLS FREEZE USI SERVICE TO INDUSTRY — BRANCHES IN ALL PRINCIPAL CITIES

ALCOHOLS
Amyl Alcohol
Butanol (Normal Butyl Alcohol)
Fusel Oil—Refined
Ethanol (Ethyl Alcohol)
Specially Denatured—All regular and anhydrous formulas
Completely Denatured—all regular and anhydrous formulas
Pure—190 proof, C.P. 96%, Absolute
U.S.I. Denatured Alcohol Anti-freeze
*Super Pyro Anti-freeze
*Solox Proprietary Solvent
*Solox D-I De-icing Fluid

*ANSOLS
Ansol M
Ansol PR

ACETIC ESTERS
Amyl Acetate
Butyl Acetate
Ethyl Acetate

OXALIC ESTERS
Butyl Oxalate
Ethyl Oxalate

PHTHALIC ESTERS
Amyl Phthalate
Butyl Phthalate
Ethyl Phthalate

OTHER ESTERS
*Diatol
Ethyl Carbonate*
Ethyl Chloroformate
Ethyl Formate

INTERMEDIATES
Acetoacetanilide
Acetoacet-ortho-anisidide
Acetoacet-ortho-chloranilide
Acetoacet-ortho-toluidide
Acetoacet-para-chloranilide
Ethyl Acetoacetate
Ethyl Benzoylacetate
Ethyl Sodium Oxalacetate
*Registered Trade Mark

ETHERS
Ethyl Ether
Ethyl Ether Absolute—A.C.S.

OTHER PRODUCTS
Acetone
Collodions
*Curbay B-G
*Curbay Binders
Curbay X (Powder)
Ethylene
Ethylene Glycol
*Indalone
Nitrocellulose Solutions
Potash, Agricultural
Urethan
Vacatone

Two-step Water Softening

By a two-step ion exchange process, hard waters can be softened so as to be comparable in quality to distilled water. With the use of acid-regenerated organic cation exchangers —so-called hydrogen zeolites—it is possible to replace all metallic cations with hydrogen ions, leaving only the corresponding acids in solution. Examples of these organic cation exchangers are sulfonated coal derivatives such as Zeo-Karb, caustic-treated lignite derivatives, materials from paper waste and acid sludge, tannin-formaldehyde and other polyhydric phenol-formaldehyde resins, and modifications of these produced by supplementary treatments. By treatment with such an exchanger any chlorides and sulfates present in the original solution will be transformed into the corresponding hydrochloric and sulfuric acids. Bicarbonates are transformed into carbonic acid.

In step two, an anion exchanger such as an aliphtic amine resin, produced commercially under the name of De-Acidite, absorbs the strong acids but does not take up the weak carbonic acid. The latter is readily decomposed into water and carbon dioxide in the degasifier that follows the two ion exchange units in series. The method of operation is described. Howard L. Tiger and Sidney Sussman. *Ind. Eng. Chem.* 35, 186-92 (1943).

Abrasive Cleaners

(*From Page* 31)

agents. Recent analysis of five leading hand soaps shows that they have the following composition: Product A.—Soap 26 per cent, pumice 10.5 per cent, water 63 per cent. Product B.—Soap 11 per cent, pumice 46 per cent, water 43 per cent. Product C.—Soap 16 per cent, pumice 16.5 per cent, water 68 per cent. Product D.—Soap 15 per cent, pumice 42 per cent, water 44 per cent. Product E.—Soap 12 per cent, pumice 54 per cent, water 33 per cent. The soap base in each of these five products was a soda soap jell. Further examination indicated that at least three of the five were made with a soap base either of cottonseed foots origin or some other vegetable oil. Only one was believed to have a base of soap similar to ordinary laundry chip.

With such a wide variation in both soap and pumice content as shown here, there would appear to be few limits to the formulation of paste scouring products on a similar basis. In a kitchen scouring agent, lather is not as important as in a hand soap, but a plentiful content of abrasive is important. Accordingly, the minimum soap content as shown in these hand soaps would undoubtedly be satisfactory. The pumice content, however, would have to be over 40 per cent as in Products B, D, and E. And whereas, water content of the foregoing hand soaps ranges from 33 to 68 per cent, the lower limit would be preferable in a scouring agent. In fact, Product E, as such, appears to be suitable for the purpose without change.

The matter of perfuming which enters into hand soap manufacture,—sassafrassy odors of one kind of another are most commonly used,—is a different type of problem in a scouring paste. Where a product is designed to be used on pots, pans and other utensils for food preparation, it goes without saying that any strong or lasting odor is not suitable. At the same time, the fatty or soapy odor of a wholly unperfumed product is also a drawback. Just enough of a citronella type perfume to cover the soap odor might answer, but better yet, a compound particularly to meet the needs of the product as worked out by an experienced perfumer is obviously the best solution.

WHEN it comes to the consideration of new types of powdered scouring compounds, the manufacturer is faced with the large number of regular feldspar scouring powders already on the market. To convert the idea of a powdered abrasive hand soap over to a kitchen scouring agent meets the competition of low price and established brands. The ordinary scouring powder was designed principally to clean and polish metal cooking utensils in the home kitchen. That it is used,—mostly incorrectly and not on the recommendation of the manufacturer,—also to scour porcelain sinks, bathtubs, painted woodwork, and even linoleum only emphasizes the all-around nature of the average product and the difficulties which competing products would have in breaking into the market. The fact that there have been several outstanding brands of mild scouring powder on the market for years designed for cleaning porcelain, glass, etc., and of a non-scratch character, has not deterred some users from the application of the strongly abrasive feldspar products for these purposes. And the question arises whether at the price for which scouring powders sell if new types could meet competition successfully unless of an unusually novel character.

For many years, low cost has been one of the paramount factors in the manufacture of scouring powders, if not *the* paramount factor. It has been said that a scouring powder just as long as it contained an abrasive could have almost any composition, and this has been literally true in many of the products sold on the American market. Feldspar has been the generally used abrasive because it is both cheap and an effective abrasive for rough kitchen work where scouring is necessary and scratching of the cleaned surface is not too important.

The feldspar content of a scouring powder may run anywhere from 30 up to 70 per cent. Soap being the most expensive ingredient in these abrasive cleaners commands the lowest ingredient percentage, varying anywhere from 5 up to 15 per cent, but with soap costs high today, the tendency is to reduce soap content and it is likely that a figure under 10 per cent is average. Generally soda ash makes up the balance and this usually runs 25 to 30 per cent. In the manufacture of some scouring powders, the soap is made much in the manner of soap powder production by saponification of cottonseed foots, soap stock or other cheap fatty material to which a large excess of sodium carbonate is added, the mass run out and permitted to harden, broken up and milled to a powder. It is then incorporated in the desired proportion with powdered feldspar. But irrespective of cost of manufacture or type, much of the demand formerly enjoyed by the steel-wool-soap scouring combinations is reported going to the regular scouring powders.

Soda Ash is a weapon

Solvay Soda Ash has its place in the Victory Program as an important basic material required in the manufacture of equipment and other products for our armed forces. Listed below are a few of the many essential war materials produced with the help of Solvay Soda Ash.

SOAP

CHEMICALS

GLASS

PETROLEUM

ADHESIVES

ORDNANCE

CLEANSERS

PLASTICS

TEXTILES

LEATHER

ALUMINUM and other METALS

PAPER

SOLVAY SALES CORPORATION *Alkalies and Chemical Products Manufactured by The Solvay Process Company*

PRODUCTS

Textile Detergent

A composition for cleaning fabrics which dissolves in hard water without formation of curds, is formed of about 40-60 per cent of a water-soluble soap, 10-40 per cent of a water-soluble salt such as the sodium salt of tetraphosphoric, pyrophosphoric or metaphosphoric acid, and 40-50 per cent of a water-soluble sulfonate. The sulfonate is obtained by extracting a mineral oil with a selective solvent for the unsaturated constituents, sulfonating the resulting mineral-oil extract while it is dissolved in liquid sulfur dioxide, and neutralizing the sulfonation product. Robert B. Colgate and Emil E. Dreger, to Colgate-Palmolive-Peet Co. U. S. Patent No. 2,294,075.

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Shaving Composition

A safety razor has a shaving head on which is incorporated a shaving composition containing thymol, stearic acid and a surface-active material. When the composition is brought into contact with water, the surface-active agent promotes a slow exhaustion of the composition from the shaving head and a rapid self-spreading of the composition as exhausted in a film upon the surface of the water. Herbert E. Wetherbee. U. S. Patent No. 2,292,418.

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Stable Organic Peroxide

One of the more recently developed chemicals is an organic alkyl peroxide, announced by the Union Bay State Co., Cambridge, Mass. *t*-Butyl hydroperoxide is an unusually stable liquid with an active oxygen content of 17.8 per cent at 100 per cent concentration. The compound can be handled and shipped in large quantities without danger of explosion from shock. It is soluble in many common organic solvents such as alcohol, ether, petroleums, and is slightly soluble in water. It is comparatively stable in the presence of acids and alkalies. Standardized at a concentration of 50-60 per cent, containing about 10 per cent of available oxygen, commercial *t*-butyl hydroperoxide appears to be ideally adapted as a bleaching agent for cotton, wool and other fabrics, and for many other oxidation purposes. *Chem. & Met. Engineering* 50, No. 2, 161 (1943).

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Petroleum Detergent

A detergent and emulsifying agent may be prepared as a sulfuric derivative of an aliphatic monomeric dihydric alcohol naphthenate. The preparation involves treating a naphthenic acid derived from crude naphthenic petroleum, with a glycol, and treating the product with a strong sulfuric acid reagent. An example is sulfated ethylene glycol mononaphthenate. Louis A. Mikeska, to Standard Oil Development Co. U. S. Patent No. 2,293,265.

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Dry Cleaning Emulsion

An emulsion is formed containing water in the internal phase, in a volatile organic dry-cleaning solvent such as V.M.&P. naphtha, together with a salt of a sulfonated fatty acid diester of a glycol such as the sodium salt of glycol dioleate sulfate. Such an emulsion serves as a dry-cleaning assistant. The salt used may be an ammonium, alkali metal, alkaline earth metal, or organic ammonium salt. Lawrence H. Flett, to Allied Chemical & Dye Corp. U. S. Patent No. 2,290,870.

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Methyl Naphthalene Sulfonate

2 - Methylnaphthalene can be sulfonated with 93 per cent sulfuric acid. The sulfonic acids and their derivatives can be made on a large scale by methods and apparatus now in commercial use. Sodium salts of these sulfonic acids show definite wetting-out properties, and have the following advantages to make them of use commercially: Low cost, stability in dry form, resistance to precipitation in hard water, stability in solutions of concentrated acids and bases, near maximum wetting in one per cent solution, and ease of manufacture. R. Norris Shreve and John H. Lux. *Ind. Eng. Chem.* 35, 306-12 (1943).

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Hydrogenated Castor as Detergent

The use of sulfonated hydrogenated castor oil as a detergent and as an ointment base is discussed by Dr. Shepard Quinby and Dr. George W. Fiero in an article in the January 15th issue of the *New York State Journal of Medicine*. The product was found by the investigators to be an excellent ingredient of detergents and ointments for use in the treatment of dermatitis-eczema cases. Judging from its practical use, say these investigators, "Its detergent properties compare favorably with those of other sulfonated oils. Since the emulsion is of creamy consistency, its use as a substitute for shaving soap was found to be excellent in those cases of dermatitis involving the face. When used as a detergent on the scalp, it was readily washed out and, unlike soap, did not leave the scalp objectionably free from oil. The property of leaving a trace of oil on the skin seemed to be especially helpful in protecting the skin against chapping which often results from the use of soap in the winter months."

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Sulfonic Acid Imides

Condensations products which are capillary active are produced from the sodium salt of para-toluene sulfonamide and cetyl sulfonyl chloride, and various sulfonated water-soluble, organic salts. The products are suitable for use in the soap and textile industries. Winfrid Hentrich and Erik Schirm. U. S. Pat. No. 2,292,997.

—— • ——

Hemicellulose in Soap

Hemicellulose can be recovered from waste from the viscose staple-fiber industry and utilized as a binding agent in the soap industry. E. Elod. *Melliand Textilber.* 22, 629; through *Chem. Abs.*

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No. 2,309,722, Toilet Preparation, patented February 2, 1943 by Benjamin G. Wilkes and Helen E. Wassell, Pittsburgh, Pa., assignors to Carbide & Carbon Chemicals Corp., New York. A toilet preparation for dermal application containing as an essential ingredient a polyoxyalkylene glycol of the 1, 2 series containing not more than three carbon atoms in each oxyalkylene radical, the polyoxyalkylene glycol having an average molecular weight not less than about 400.

No. 2,309,860, Protection of Insecticides, patented February 2, 1943 by Jean Motte, Corbas, and Jean Pomot, Lyon, France, vested in the Alien Property Custodian. Insecticide preparations containing rotenone characterized by inclusion in the powdery insecticide of finely divided "red muds" obtained as a by-product in the manufacture of alumina.

No. 2,310,099, Deodorant, patented February 2, 1943 by Charles E. Loetel, Kansas City, Kans., assignor to Anderson-Stolz Corp., Kansas City. A deodorant comprising an aqueous solution of potassium mercuric iodide stabilized with a caustic alkali.

No. 2,310,475, Soap, patented February 9, 1943 by Richard Thomas and Henry Bowen Oakley, Bromborough, England, assignors to Lever Brothers Co. A soap product having improved hard water characteristics comprising a water soluble soap of a mixture of soap forming fatty acids, the soap forming fatty acids comprising about 10 to 30 per cent of saturated acids having more than 18 carbon atoms, at least about 30 per cent of unsaturated acids, not more than 30 per cent of a mixture of palmitic and stearic acids whereof the stearic acid does not exceed 15 per cent of the total fatty acids, and any other saturated acids present being of lower molecular weight than palmitic acid; and an alkali-metal phosphate selected from the group consisting of alkaline-reacting ortho-phosphates, pyrophosphates, polyphosphates and metaphosphates, the amount of the orthophosphates and pyrophosphates calculated as an anhydrous salt being one part to four to 10 parts by weight of the fatty acids in the soap, the amount of the polyphosphates and metaphosphates calculated as an anhydrous salt being one part to two to four parts of the fatty acids in the soap, the soap product being in a solid finely divided form to insure rapid solution in water, whereby the soap product may be dissolved in hard water without substantial precipitation of insoluble soaps.

No. 2,310,931, Partitioned Soap and Process for Forming the Same, patented February 16, 1943 by John W. Bodman, Winchester and Fred Forrest Pease, Squantum, Mass., assignors to Lever Brothers Co., Cambridge, Mass. A method of treating soap to facilitate the partitioning of a mass of such soap which comprises dividing a heated mass of soap by causing the soap to flow relative to a dividing element to alter the arrangement of the soap crystals along a predetermined planar zone in the soap mass to decrease the natural cohesion of the soap crystals in the zone, and causing the divided mass of soap to rebond after passing the dividing element.

No. 2,311,585, Parasiticide, patented February 16, 1943 by William P. ter Horst, Packanack Lake, N. J., assignor to United States Rubber Co., New York. Fungicidal and insecticidal preparation containing as an active essential ingredient a salt of an N-aryl hydroxylamine with an acid.

No. 2,311,629, Insecticide Spray Material and Method of Making the Same, patented February 23, 1943 by Robert B. Arnold, Stonewall Courts, Va., assignor to Tobacco By-Products & Chemical Corp., Louisville. A preformed spray composition suitable for use in making an insecticidal aqueous spray, consisting of a solid dry comminuted polysilicate of metal selected from the group consisting of aluminum, iron in trivalent form, the polysilicate having in chemical combination an insecticidal alkaloid selected from the group consisting of nicotine, nornicotine, anabasine, and also carrying a surcharge consisting of a relatively large amount of water-soluble salt of the same alkaloid in substantially dry form adsorbed on the polysilicate.

Oil Constituent Separation

A liquid-phase extraction of oils may be used to separate them into one fraction rich in unsaturated glycerides and another fraction containing more completely saturated glycerides. The oil is treated with an organic polar solvent selected from those such as formamide, acetamide, orthnitroanisole, diethylene, triethylene tetramine, etc. The solvent is relatively immiscible with the saturated glycerides at a low temperature, the temperature being above minus 20°C. The two phases are separated while they are both in the liquid state. One phase consists primarily of undissolved glycerides relatively poor in unsaturated compounds and containing some solvent. The other consists of the solvent in which is dissolved glycerides relatively rich in unsaturated compounds. Numerous solvents are listed which may be used. Stephen E. Freeman. U. S. Patent No. 2,291,461.

Hardened Whale Oil Values

Iodine number and thiocyanate number were determined for whale oils of varying degrees of hardness. The highly unsaturated acids of whale oil give values for thiocyanate number which are on the average 50 per cent of those for iodine number. These values indicate a thiocyanate addition of 2-4, 2 or 3-5 or 3-6 double bonds. It is further found that hydrogen adds preferentially to those double bonds which do not add thiocyanate. The thiocyanate number remains almost constant for a long time during selective hydrogenation. By hydrogenation, fatty acids are obtained with 2 or 3 double bonds which have the same values for iodine number and thiocyanate number. J. Lund. *Fette und Seifen* 48, 361-5; through *Chem. Abs.*

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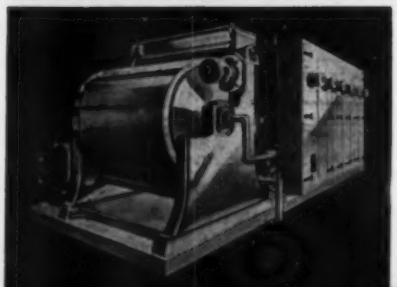

In producing flakes for granulated soaps, toilet cakes or packaging, high speed output can often be an item of great saving. With the New Proctor Flake Soap System, from the hot liquid soap in the kettle or crutcher to the dried flakes requires only 6 to 14 minutes and capacities may be obtained from 750 to 6000 lbs. per hour, according to flake thickness, character of soap, etc. At this stepped-up production, quicker deliveries are assured and there are tremendous savings in floor space and equipment. Complete details are contained in a new 16-page illustrated catalog that is yours for the asking.

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IF YOU want additional information on any of the items described below or if you want any of the bulletins, catalogs, etc., write to the MacNair-Dorland Co., Inc., 254 West 31st St., New York, mentioning the number of the item.

936—Moth Goods Booklet

United Cigar - Whelan Stores Corp., New York, are now distributing a four-page booklet with an insert of the White Tar moth prevention products. Included in this year's catalog are full-color illustrations of moth balls, flakes, paradichlorobenzene products, deodorizers, sulphur candles, paradichlorobenzene vaporizers, and garment bags. In conjunction with the issuance of the Spring moth prevention catalog streamers for store windows and counter leaflets are being distributed around April first.

937—Glass Tanks

Pittsburgh Plate Glass Co., Pittsburgh, Pa., has just introduced a line of glass tanks for industrial or commercial applications requiring non-corrosive, shock - resisting material. They use a minimum of critical material and are not just glass lined, but are actually tanks made of glass by building up the required shape and size of heavy tempered glass plates. The entire tank is usually surrounded by a wooden frame filled with a compound. This frame serves both as insurance against leaks and as a protection against severe physical blows.

938—"Insect Invaders"

A 228-page book by Anthony Standen, has just been published by Houghton Mifflin, Boston. The book begins by telling what insects are, how they fit into the scheme of things, how they eat, breathe, fight and multiply and why they cost us more than a billion dollars a year in addition to a high toll of human life. There are stories of actual campaigns in the war against insects and there is also a picture of the grand strategy that governs our fight for life with the insect invader.

The author studied in British public schools and Oxford, where he became interested in chemistry. He did graduate work in this subject at Massachusetts Institute of Technology in 1929 and 1930 and started work as a research chemist with Imperial Chemical Industries, the British chemical combine. Here he was assigned to work on cyanides, specializing in fumigation against insects. Mr. Standen is now back in America and has recently been working on insecticides with the New Hampshire State Agricultural Experiment Station.

939—Standard Synthetics' Blotters

Standard Synthetics, New York, distillers of essential oils and manufacturers of aromatics, are using scented blotters as advertising media for their customers in South America. The copy on the blotters, of course, is printed in Spanish, and full color photographs of Hollywood starlets, "Stars of Tomorrow," are used as decorative material.

940—Van Dyk Catalog

Van Dyk & Co., Jersey City, N. J., manufacturing chemists, have just issued their 1943 catalog of raw materials for use in the manufacture of perfumes, cosmetics and soaps. This new 4" x 9" booklet is available on request.

Warren Kinsman Advanced

J. Warren Kinsman, formerly assistant general manager of the plastics department for E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., has been named assistant general manager of the organic chemicals department.

Rosin in Soap

(*From Page* 24)

chipped and spray-dried soap. An interesting observation relative to these finely divided soaps is a reduction in dusting in such soaps. Color also can be controlled. Experience to date is illustrated by the five soaps on page 22. Of the soaps shown in the picture, that made to contain 15 per cent N wood rosin was the only one having any noticeable increase in color over the

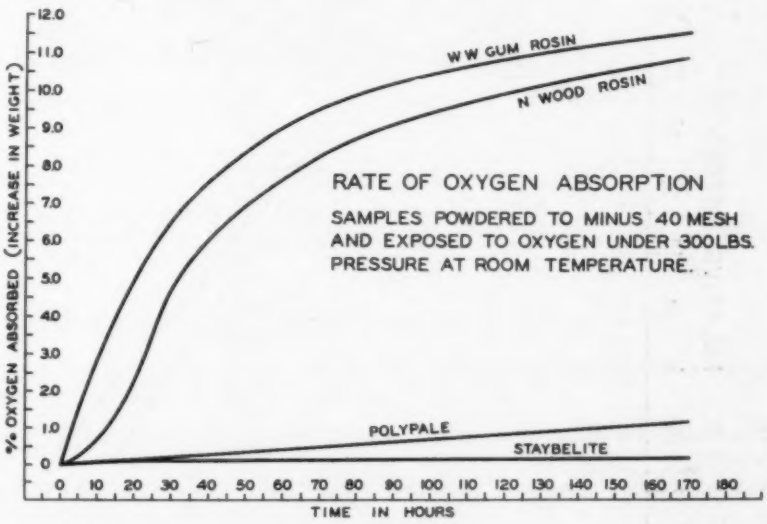
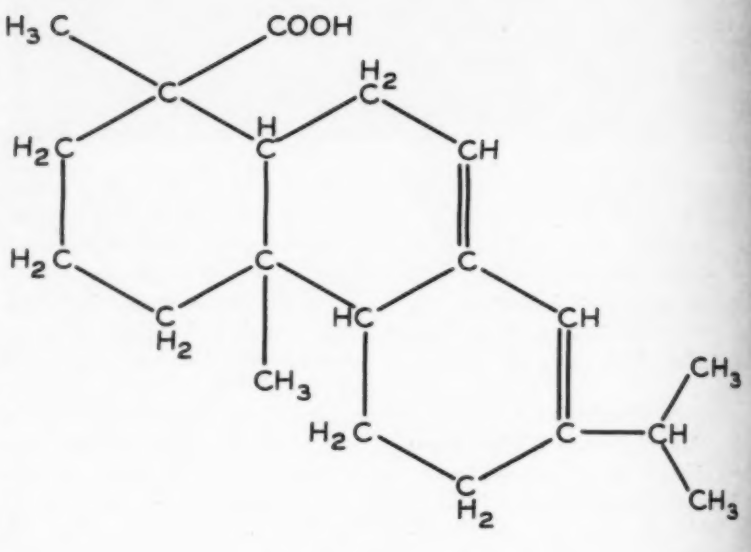


Fig. 2—Hydrogenated and polymerized rosins have a greatly reduced ability to combine with oxygen compared to regular gum and wood rosins.

control soap. These spray-dried soaps were tested for reversion by exposing them in an atmosphere of 80 per cent relative humidity at a temperature of 80° F. for periods up to eight months. At no time did they show any tendency to revert beyond a slight lumping which could be readily broken down by light tapping of the container.

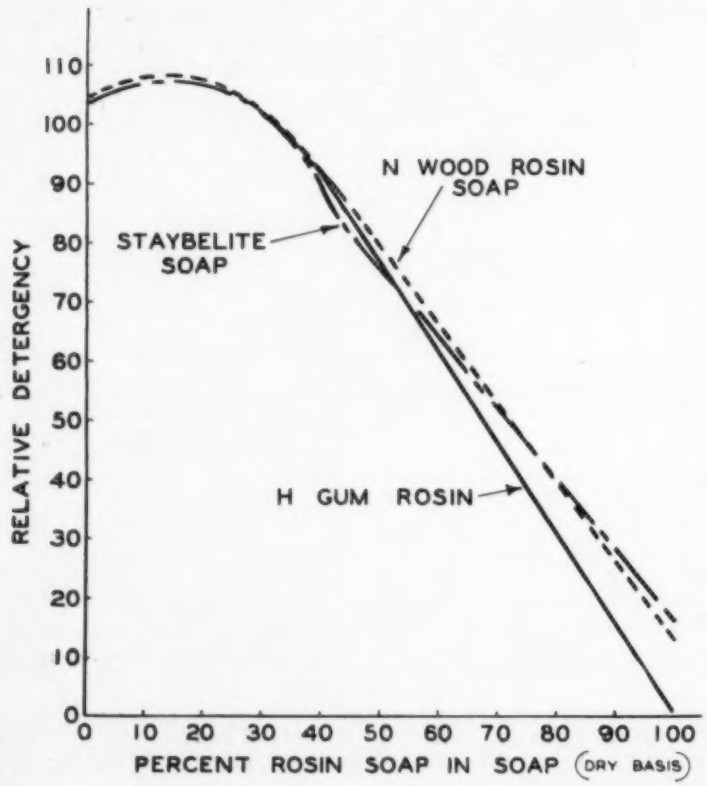
As to the disadvantages of the use of rosin in soap, the low titer and no by-product glycerine are probably the most important. Although no glycerine is obtained on saponifying rosin, it is believed the advantages of rosin use are sufficient to outweigh such loss in the face of a fat shortage. Since rosin has been used so long and successfully in past years in the production of good soap, the question relative to low titer is not serious, it is believed. Between the skill of the soapmaker and the choice of rosins available, the disadvantage of low titer should offer no serious handicap. High-melting resins, such as polymerized rosin, are naturally an added advantage in this respect.



ABIETIC ACID

Structural formula for abietic acid, the location of the double bonds indicating numerous possibilities in chemical derivatives.

Fig. 3.—Improvement in detergency when N wood rosin, H gum rosin, and hydrogenated rosin (Staybelite) are used in soap in amounts up to about 30 per cent.



The question sometimes arises as to how rosin should be added in the soapmaking process. Should it be added along with the fats and oils or should it be saponified separately and then added? Experience indicates either of these ways may be followed. One soapmaker prefers one method while another swears by a different method. Since rosin is a different soap stock, it is to be expected that it may act somewhat differently than other stocks. It, therefore, follows that the skilled operator is going to adjust his operation to take care of any developments tending to give results different from those desired. Accumulated information indicates that any soap producer should have no real difficulty in making advantageous use of rosin to alleviate the conditions facing him today. And the probability is that most of those who make use of rosin under present conditions will end the war period with a continued use of rosin in at least some of their soap products.

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The needs of our armed forces and agriculture are so great that *all* of us must do what we can to s-t-r-e-t-c-h out supplies of Pyrethrum.

Pyrin**—(lower in price than straight Pyrethrum Extract) stretches out Pyrethrum stocks two and one-half times compared with your using straight Pyrethrum Extract.**

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***Nature alone* produces the lethal pyrethrins found in pyrethrum flowers. These lethal components of *natural* pyrethrum have been accepted for many years as the most toxic insecticide base for a safe, effective spray.**

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INSIDE NEWS

APRIL PREPARED BY NATIONAL CAN CORPORATION, NEW YORK, N. Y. 1943

Glycerine in A.R.P. Glass Protection

Lessons Learned from Bombing of London Prove Helpful to American Investigators

RUIN IN OXFORD STREET AFTER "BLITZ" RAID—These hollow-eyed buildings, with scarcely a pane of glass remaining in their gaunt window frames, graphically illustrate the need for reinforcing plate glass against the concussion of high explosive bombs.

Much of the pertinent information concerning the treatment of glass to protect people from flying splinters and jagged fragments during air-raids has been obtained from the bitter experiences of the much-bombed British. Among the several procedures recommended by the Ministry of Home Security, A.R.P. Department, is the employment of thick, tough or reinforced paper applied to the glass with flour paste or acacia mucilage made slightly tacky by the addition of 5 per cent of glycerine. Uncoated transparent wrapping materials (except cellulose acetate film) can also be used. These are applied to the windows by means of a good clear gum to which 15 per cent of glycerine has been added.

Investigations have also been carried out by American investigators. Recently, one of them developed a new and very effective procedure for protection against flying glass. According to his method, old bed-sheets are cut into one-inch strips which are freely daubed, by means of a paint brush, with the following composition:

Wheat flour	4 oz. av.
Powdered alum	4 drams
Sodium benzoate	20 grains
Oil of cloves	30 drops
Glycerine	4 fl. oz.
Water	2 pints

The flour and alum are rubbed to a smooth paste with the water and the glycerine. The mixture is then heated quickly to the boiling point, removed from the source of heat, and then thoroughly mixed in the remaining two ingredients.

It is advisable to apply the strips to windows in criss-cross fashion, placing them about 1-½ inches apart and permitting the ends to overlap the edge of the window frame. (314)

To Locate Fish By Sound

Fishermen in British Columbia waters may soon seek their fish by sound. This method of locating large schools of fish has proved effective in Norwegian waters and is to be tried out in the herring fishing industry of British Columbia. A fish canning company is fitting a 45-ft. boat with an echo sounding device at a cost of $4,000 to $5,000.

Originally devised to aid ships in shallow waters, this echo sounder has been improved until it will record a whisper, and it is used in detecting the presence of submarines in wartime. As used by fishermen, the device will locate a large mass, or school, of fish by the sound reflected from the body of fish, and the distance to the catch will be indicated by a meter. (336)

Progress Reported in Guayule Rubber Project

Progress in the expansion of the guayule rubber production program under the several cooperating agencies of the U. S. Department of Agriculture has exceeded early expectations. Recent developments by the Department's Emergency Rubber Project are in accord with the findings of the Baruch committee which recommended "that this program be given every possible support as the principal source of crude rubber which could not be lost to us short of conquest of American territory."

The Forest Service, which is administering the production phases of this emergency program, will start to mill in mid-January the older shrubs previously reserved for seed collection.

This winter the Forest Service factory will manufacture 600 tons—only a fraction of the nation's needs—but the first natural rubber produced in the United States since the beginning of the war. Plantations being established this winter are expected to yield about 21,000 tons from the harvest starting late in 1944. The planting and harvesting schedule is planned to produce about 80,000 tons annually thereafter. Even the maximum production mentioned, however, is small in comparison with the country's normal peacetime consumption of 700,000 tons of rubber a year. (315)

Boost for Canned Milk

When properly prepared, canned and dried milk retain the full nutritional value of the fresh milk, it is revealed by studies in Switzerland. This is especially true of the sweetened products. Even vitamin C, in spite of its sensitivity, is retained by the best modern methods. Furthermore, uniform composition, freedom from pathogenic organisms and fine casein dispersion make canned and dried milk products more digestible than fresh milk. (316)

"Utility" Paint Proposal Renewed in Britain

Since domestic paints have become almost unobtainable in Britain, discussions on the advisability of producing a limited amount of a "utility" paint are again in progress between the Board of Trade and the Paint Federation. A recent statement in the House of Commons revealed that a provisional arrangement has been made for a supply of linseed oil for such paint, and steps are being taken for the release of certain quantities of other necessary raw materials. The British paint trade believes that the "utility" paint, when eventually produced, will be made in three or four shades. (317)

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An Oasis in the Desert

A 2½-gallon water canteen produced by National Can for our armed forces.

Brine Preservation of Vegetables

Because of the shortage of containers, experiments are being conducted, with indications of success, in the brine preservation of snap beans, peas, lima beans and other vegetables. The process, similar to that employed in brine curing of pickles, has been under study at North Carolina Agricultural Experiment Station for several months. The research is conducted cooperatively by the experiment station and the U. S. Department of Agriculture.

If successful, the brine preservation of vegetables would help to build up food supplies to meet wartime needs of the United Nations and would save those portions of the crop generally lost through seasonal overproduction. (318)

Lactic-Acid Lacquers

Efforts to devise lacquer substitutes for tin containers, through the use of lactic acid obtained from the whey that is a by-product in cheese and casein factories, are making progress. In experimental coating of steel milk cans this lacquer has proved highly successful, also in coating evaporated milk cans. Previously dairy scientists had developed lacquers suitable for coating wood, paper, glass and other substances. Some of these lactic-acid lacquers doubtless will be useful to various branches of the canned food industry. (319)

* * *

Approximately one-sixth of all gasoline consumed in the U. S., 5,000,000,000 gallons, goes to farmers. They also use large quantities of lubricating oils and greases, estimated at 138,000,000 gallons and 2,000,000 pounds respectively.

Technical Topics

INSECTICIDES—The effectiveness of attractants and repellents for insects and animals can be increased substantially by the incorporation into the formulas of minute quantities of glandular extracts of animals such as the skunk, the muskrat, etc. Musk odor serves as a particularly powerful lure in insect attractants. (320)

SURGERY—A British publication reports that wire of corrosion-resistant alloy steel is being used by Swedish surgeons in place of silk or catgut. (321)

CAROTENE DETERMINATION in plant tissue by a rapid chromatographic method was described recently in a project completed in the Eastern Regional Research Laboratory of the Department of Agriculture. The method can be used for both fresh and dehydrated materials. (322)

POTASSIUM CARBONATE is now being produced in Germany from a mixture of potassium sulphate, lime and coke. The sulphate and lime are reacted at elevated temperatures in the first step of the process, to produce a concentrated solution of potassium formate containing calcium sulphate in suspension. The liquor is then evaporated to dryness and the residue calcined in a surplus of air. (323)

ROSINATED CALCIUM LAKES are improved in tinctorial properties, mass-tone, and strength by the addition of small amounts of sulphuric acid esters of the higher fatty acids during processing, it is claimed in a recent British patent. (324)

TETRAETHYLTHIURAM MONOSULPHIDE has been found an effective agent for the treatment of scabies in Britain. (325)

LINSEED OIL — Lend-Lease has been shipping large quantities of linseed oil to Russia to be used principally as food. The hydrogenation of such oils to harden them is entirely feasible, and experiments have disclosed that an excellent shortening can be made from oil either wholly or partly linseed. (326)

NEW FOOD SHORTENING—By a recently developed process, tasteless and odorless shortening with a vitamin content is made by hydrogenating fish oils, adding them to vegetable oil and treating further by hydrogenation. (327)

PEELER — Developed for a marmalade manufacturer, a lathe-like peeler has been patented which removes from citrus fruit the outer surface of the peel containing the bitter cells. (328)

MEAT PRESERVATION—To inhibit deterioration in meat products, a method has been developed for subjecting the meat to inert gas under greater than atmospheric pressure. (329)

VEGETABLE DISCOLORATION — Discoloration of the cut surfaces of fruits and vegetables can be prevented by dipping the pieces in dilute thiosulphate solutions. The method has recently been patented. (330)

SYNTHETIC RESIN IDENTIFICATION by means of schematic flame and olfactory tests was described recently. (331)

BISMUTH SUBSALICYLATE has been found effective for combatting blue mold or downy mildew disease in tobacco. (332)

LIVER can be dried and reduced to a fine brown powder by a recently developed process. When so processed, it is said that it can be preserved indefinitely without refrigeration and occupies only about one-fifth the normally required space. (333)

TARTAR EMETIC SPRAY RESIDUES on citrus plant materials may be rapidly determined by a recently developed analytical method based on iodometric titration. The iodometric procedure eliminates the necessity of ashing the leaf materials, as was done in the modified Gutzeit method formerly employed for determining the antimony content of the tartar emetic. (334)

CHROME YELLOW, with a solubility of only 1.75 percent, for use as a pigment in paints, inks and other materials is now being offered by an American company. The new pigment is especially intended for use in camouflage coatings, since the low solubility reduces the possibility of lead being assimilated to a dangerous degree during the spray-painting of war materials. (335)

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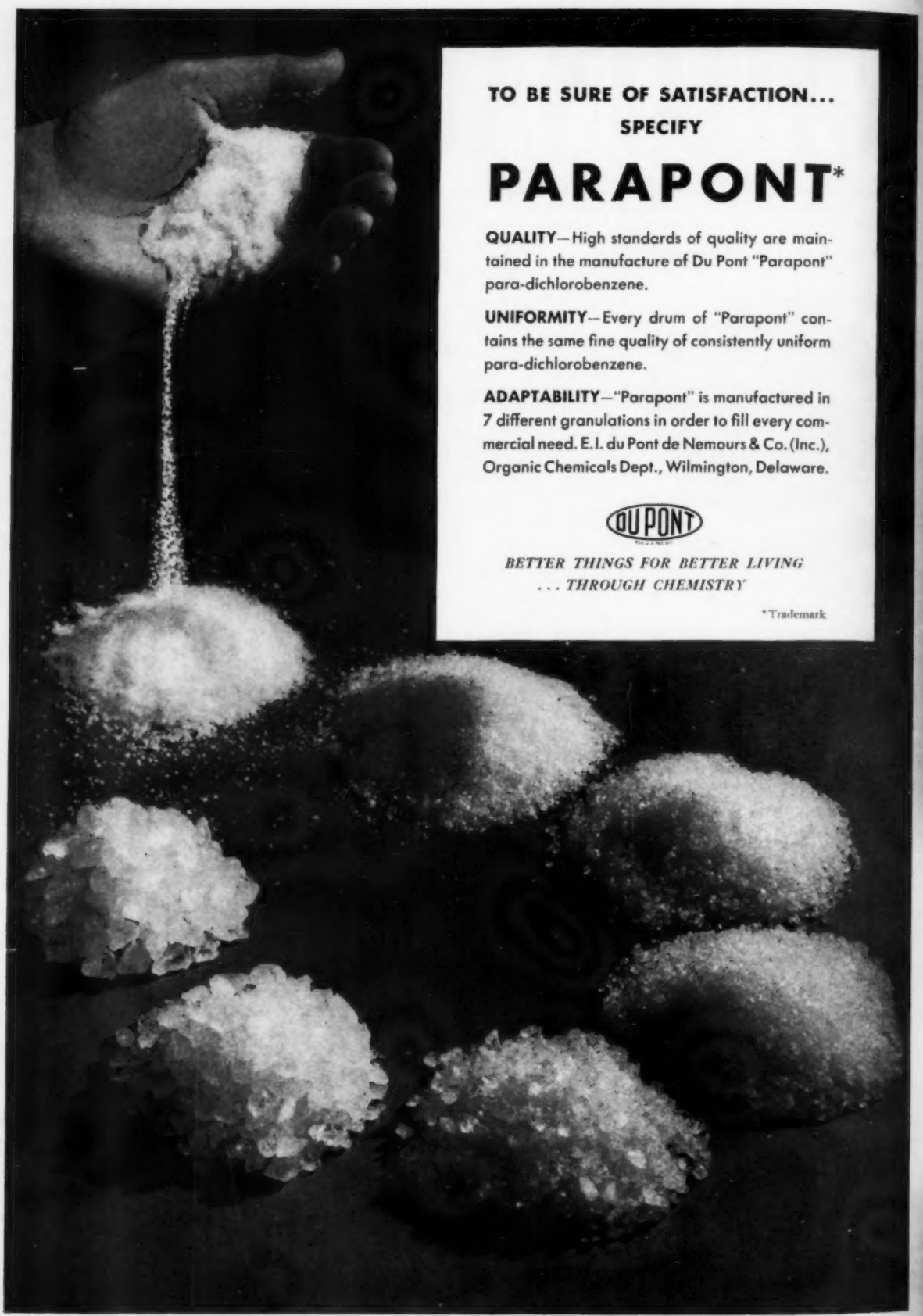
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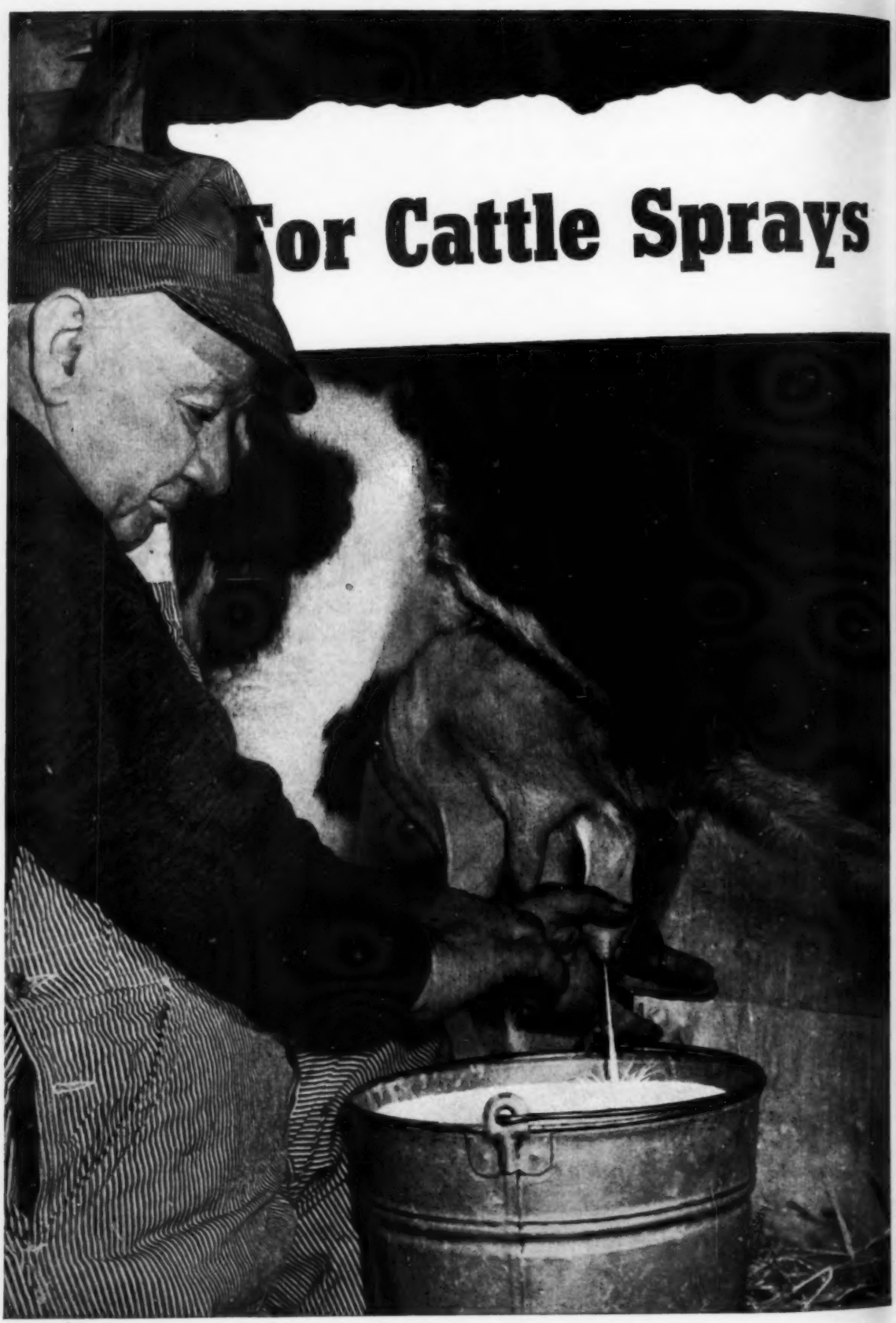
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		Down in	*Dead in*		*Dead in*		*(24 hour)*	
		10 min.	*24 hr.*	*48 hr.*	*24 hr.*	*48 hr.*	*Grade*	*Rating*
30*	1.75	98.4	41.2	51.0	40.4	41.1	B	+ 0.8
	2.00	98.9	52.4	65.3	40.0	40.6	A	+12.4
	2.50	99.2	59.5	75.4	40.4	41.1	AA	+19.1
41**	1.75	92.8	67.2	67.4	57.1	57.7	A	+10.1
	2.00	96.6	72.7	72.9			A to AA	+15.6
	2.50	96.8	76.7	77.5			AA	+19.6
50/60	1.50	94.8	56.6	57.1	52.9	54.0	B	+ 3.7
	2.50	99.5	78.5	80.4			AA	+25.6
	5.00	99.6	89.8	98.8			AA	+36.9
65/75	1.50	97.9	56.5	57.1	52.9	54.0	B	+ 3.6
	2.50	98.8	78.7	80.4			AA	+25.8
	5.00	100.0	85.4	96.9			AA	+32.5
80/90	1.50	93.1	39.2	39.7	49.1	49.9	Below B	— 9.9
	2.50	99.1	63.2	64.2			A	+14.1
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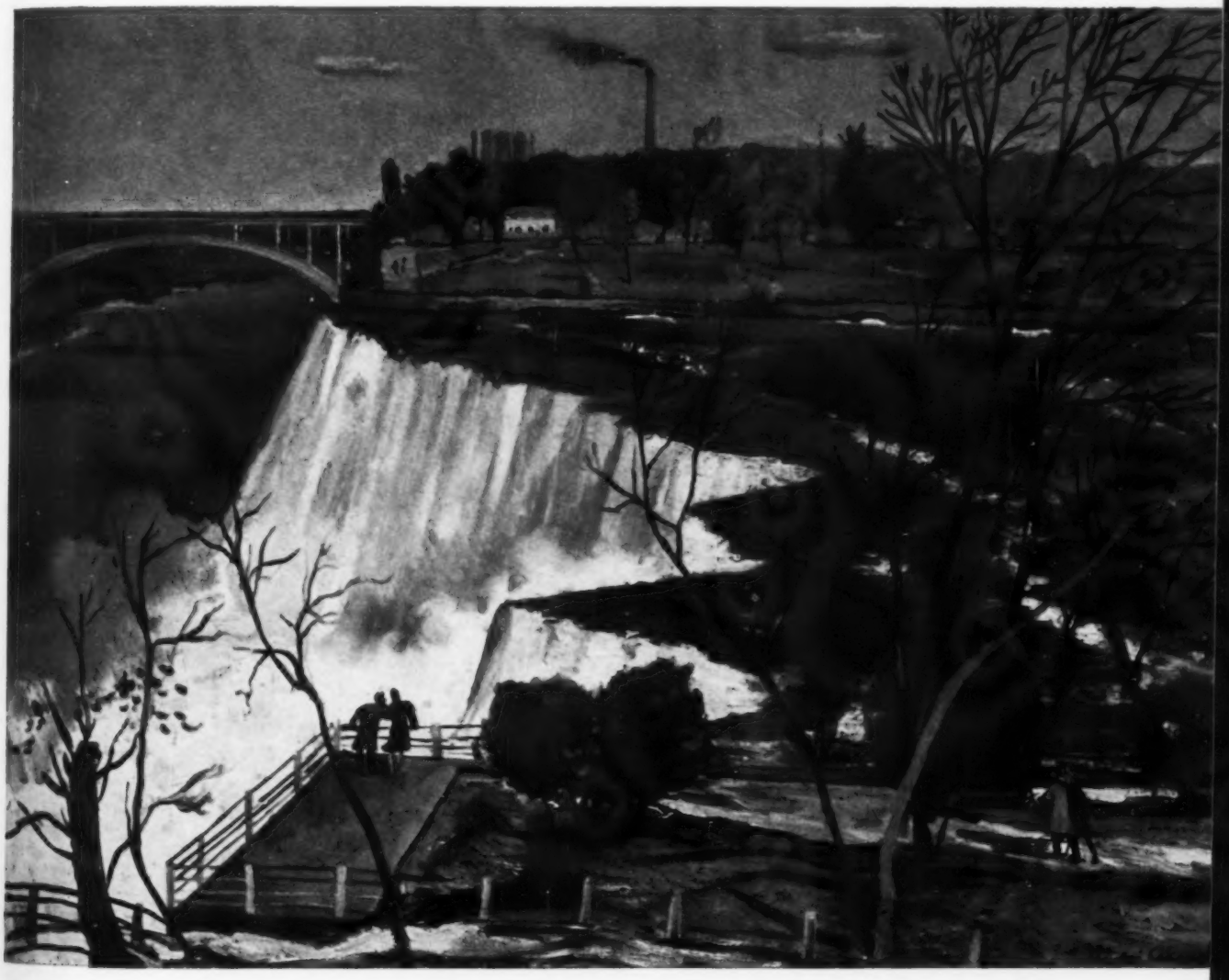

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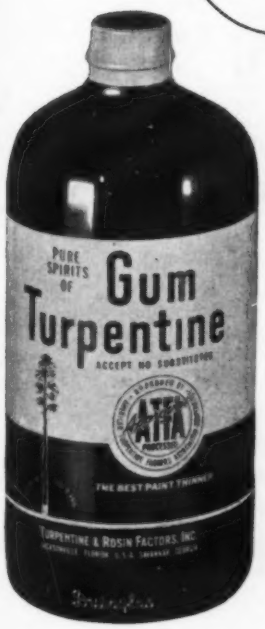

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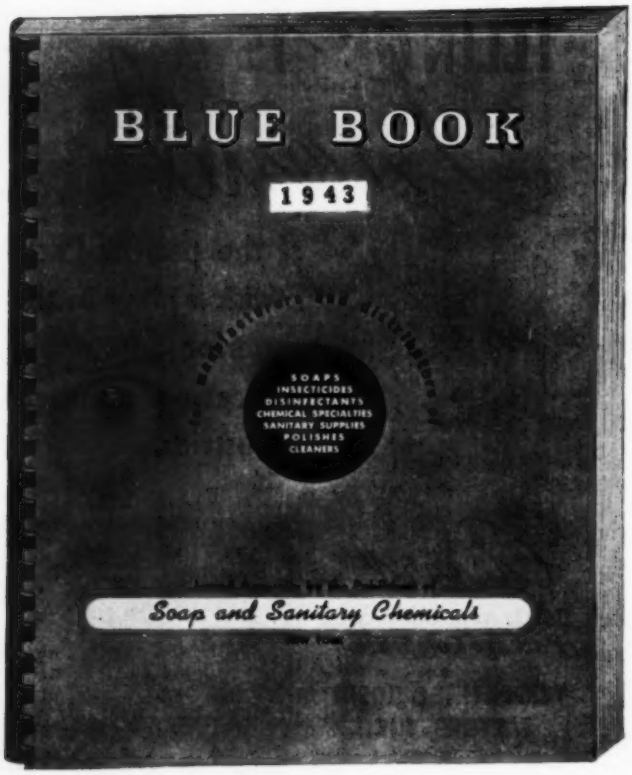

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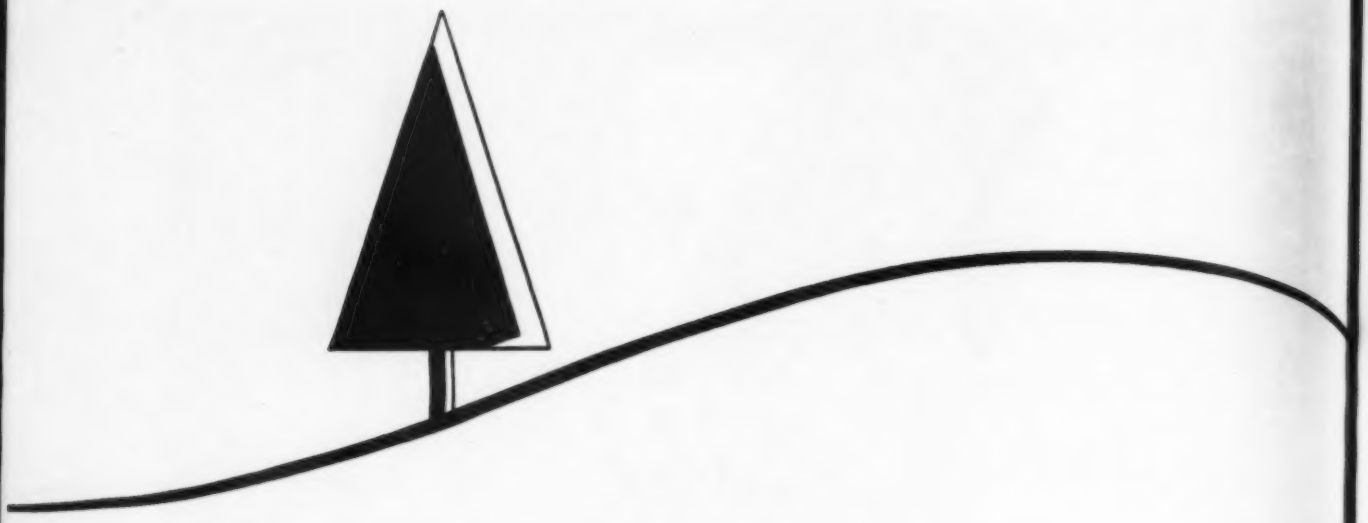

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SANITARY PRODUCTS

A SECTION OF SOAP

Official Publication, Nat'l. Assn. of Insecticide & Disinfectant Manufacturers

DELAY by W.P.B. in allocating pyrethrum supplies is bringing a rising tide of criticism from the insecticide industry. The complaint that many sections of the country are vulnerable to sudden development of insect damage in both agriculture and essential industry is heard more often. By the time pyrethrum, ready for use, could be distributed to needed points, it is stated, the damage would be done.

Even for specified uses, less dependence can be placed upon rotenone products as the scarcity is more acute than ever, 80 per cent of all shipments to the U. S. since last December having been lost by enemy action. It would seem under the circumstances that the sensible thing would be to get such pyrethrum as is available into the proper form and physically distributed to points where if needed it could be ready for immediate use by agriculture or for industrial food protection. And the danger of such insect damage is present now in many sections of the country.

IF the finished materials which any manufacturer is selling are being used in the maintenance of sanitation in defense plants, Army, Navy or other government establishments, hospitals, schools, or in other necessary public maintenance work, the manufacturer should determine this now and obtain all the specific information on uses possible. The time may not be far off when such information will be imperative if new supplies of raw materials are to be secured. Right now, this information in the hands of a supplier might aid greatly in facilitating the flow of both raw and finished materials, and also save much needless correspondence.

Whether the products be scrub soaps, disinfectants, floor waxes, deodorants, cleansers, or other item for general plant and sanitation maintenance, manufacturers who have not already done so should get a complete picture of the end use of their materials. Armed with this information, future assurance of raw materials supplies is likely to be improved.

AFTER the present war, there will be no business secrets if we are to believe some of the things heard in Washington. However, it is understandable that manufacturers will resist furnishing confidential facts and figures to W.P.B. and other government agencies if they feel that such information may find its way into the hands of competitors. And in view of present almost chaotic conditions in some government divisions in Washington, many manufacturers quite definitely believe that leaks can and do occur. It is understandable, therefore, when predictions are made that after the war when the lid is really taken off things in Washington, the aroma may not be too savory.

RAPID INSECTICIDE TESTING

Use of the settling mist method for testing of vaporized contact insecticides against houseflies

By T. C. Allen, R. J. Dicke and J. W. Brooks*

Wisconsin Agricultural Experiment Station
University of Wisconsin

A MODIFIED procedure for testing petroleum base insecticides of the settling mist type and estimating relative toxicity of insecticidal materials to houseflies was described in 1936[1]. Improvement in this procedure has made possible a rapid method for evaluating large numbers of test samples which in recent years has enabled a single operator to perform ten tests in one hour. The method involves replicate testing of small numbers of flies exposed in cages in a settling mist chamber. Considerable time may be conserved in the operation of this procedure and in the methods of culture and handling of large numbers of flies for testing purposes.

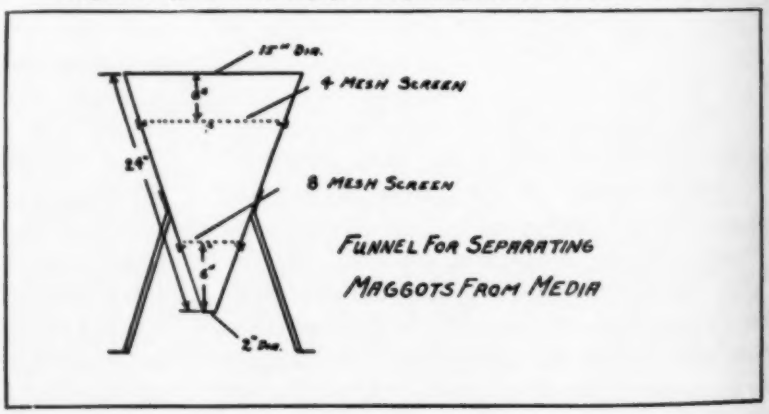
Culture Methods: — Houseflies were reared in a constant temperature and humidity room which was kept at approximately 85°F. and 60-70 per cent relative humidity. Under these conditions the preoviposition period was 7 days, the egg stage about 12 hours, larval stage 6½ days, pupal stage 6 days and the adult pretesting period 5 days. The complete cycle from emergence of adults for breeding purposes to adults of a second generation for testing was 25 days.

In the culture of flies, approximately 300 adults were placed in a screen breeding cage 18 x 12 x 10 inches in size. Following the preoviposition period, eggs were collected over a period of two days. These flies were fed equal parts of milk and water from an inverted 250 cc. beaker which rested upon a blotter paper and a 10 cm. watch glass. Egg masses were deposited on the blotter paper from which a measured number was readily obtained. This was accomplished by measuring 0.25 mls. of eggs in a small graduated funnel. It was important to collect definite quantities of eggs for rearing as considerable variation in size of adult flies occurred if larval populations varied within the rearing medium. When individuals of unequal size were used there was a consequent variation in susceptibility to testing materials.

The eggs were transferred to a synthetic medium prepared according to Richardson[2] as follows: 140 gms. alfalfa meal, 280 gms. bran, 480 mls. water and 480 mls. of a stock solution containing 5 cakes compressed yeast and 200 mls. malt extract made up to 3785 mls. of water. Approximately 1400 gms. of prepared media was placed in a five-quart crock. The above quantity of media and 0.25 mls. of eggs in each crock produced approximately 1,000 pupae.

Full grown larvae developed in this medium within six to seven days. Pupae were obtained by separating the larvae from the media one day before the termination of the larval period. Media containing the larvae was then placed in a Berlesi separatory funnel (Diagram 1) in which was attached a series of 4-, 8-, and 12-mesh screens. Exposure to light caused the mature larvae to rapidly work downward through the screens and into a recep-

Diagram 1. Type of funnel employed in separating mature larvae from the media.



* Approved by Wisconsin Agricultural Experiment Station.

[1] SOAP 12:105-107. 1936.

[2] Science 76:350-351. 1932.

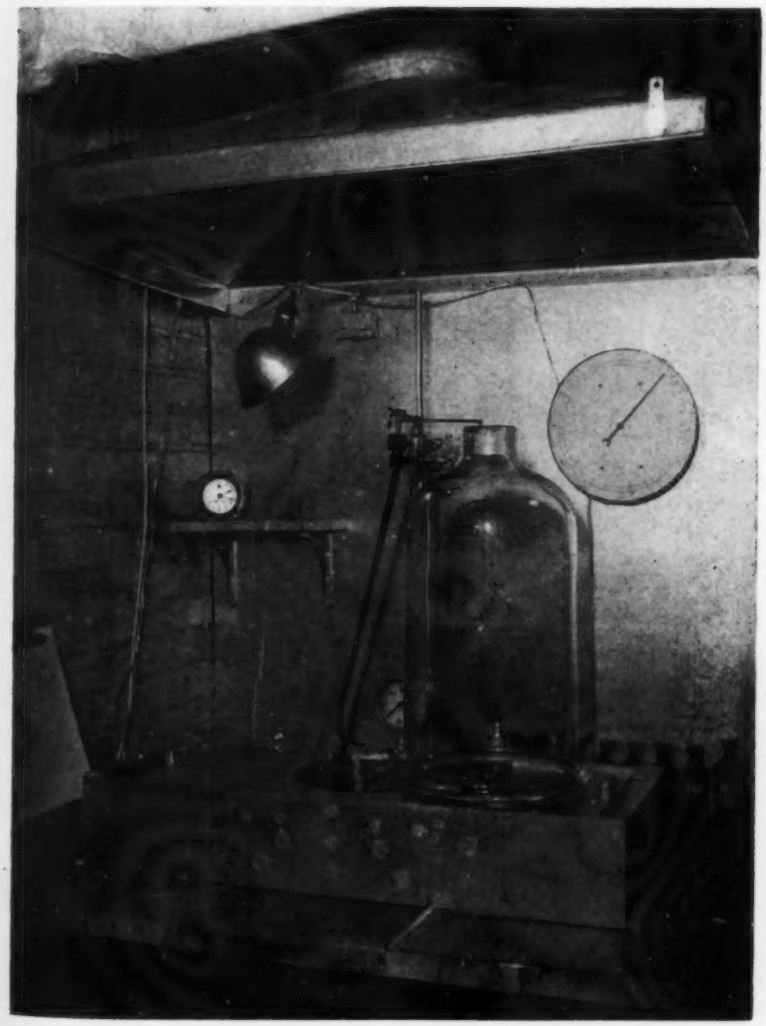
tacle containing dry sand. The sand afforded a clean medium for pupation and a convenient substrate from which to remove the pupae. Separation of the pupae from the sand was rapidly accomplished by sifting the contents of the receptacle over a 12-mesh screen.

To secure more uniform emergence of flies, pupation in the sand was not allowed to continue for more than 24 hours, and at the termination of this period larvae and undersized pupae were eliminated. The remaining pupae were then transferred to petri dishes and incubated five days in the fly-rearing room. Approximately 24 hours before the flies were due to emerge, 40 pupae were confined in each testing cage (Plate 1). Pupal cases and those pupae which did not emerge during the 24-hour period were discarded through the opening at the side of the cage. This procedure eliminated the handling of flies and insured a random sampling of 35 uniform adults in each cage for testing.

The test cages were made from one pound coffee cans five inches in diameter and two inches deep. They were enclosed on the top and bottom with 14-mesh wire screen, and a 14 mm. opening was stamped out of the side. The opening served to admit a short piece of glass tubing 14 mm. in size which was supported by a rubber stopper and held in position by an elastic band (Plate 1). Feeding was accomplished by means of a wick prepared from Number 2 dental cotton rolls. The wick projected from both ends of the glass tube, the upper end extending into the cage and the lower end into an underlying V-shaped metal trough one inch in depth containing the milk solution. Adult flies were confined in these cages for a period of five days before testing. It was necessary to replace the wicks daily and replenish the supply of diluted milk solution within the metal troughs.

Plate 1. Testing Cage in Position Over Metal Trough Showing Method of Feeding Flies.

Plate 2. Settling Mist Testing Booth.



Testing Procedure: The testing device for measuring the relative toxicity of contact insecticides was essentially a modification of Campbell and Sullivan's settling mist method in which a kerosene base spray was introduced into a chamber (Plate 2)[3]. A bell jar, 21 inches in height and 11 inches in diameter, was used as the settling mist chamber. Three mls. of spray were atomized into the upper opening in the jar and adult flies confined in cages were subjected to the settling mist. The spray was applied by means of a No. 15 De Vilbis atomizer at 20 pounds air pressure. A uniform mist was obtained by allowing the spray to settle for 10 seconds before the cage of flies was exposed to the insecticide. Previous to testing, the feeding wicks of the cages were replaced by cork stoppers. The cages containing the flies were then introduced into the chamber by a sliding door and a movable sub-stage device (Diagram 2). After a two-minute exposure period, an air draft from electric fans installed below the testing device and within the hood (Diagram 3) drew the mist from the chamber and volatilized excess spray deposited on the test cage.

[3] Bureau of Entomology Mimeograph E-T 11. April 1934.

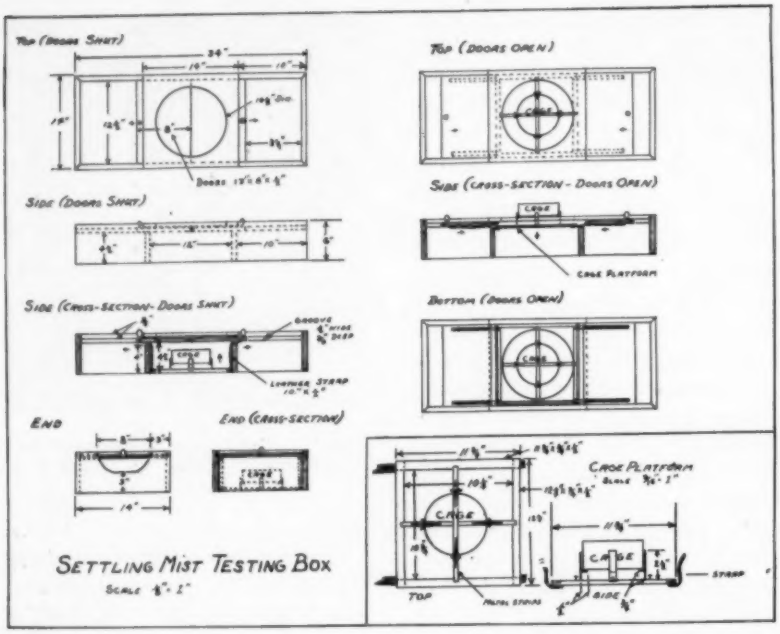


Diagram 2. Detail construction of sliding door and movable sub-stage device for introducing cages to spray.

Five-day-old flies were subjected to the mist for a two-minute period. While making a series of test runs it was possible to record knockdown of flies after intervals of three and ten minutes. The cages were then prepared for feeding the tested flies with a five per cent sugar in water solution by replacing the opening in the cage with a clean glass tube and cotton wick. Between samples tested, the atomizer was flushed with clean kerosene and the apparatus cleaned of any excessive accumulation of spray.

In making the tests, a series of sixteen cages was arranged in couplets with A to F representing tests of unknown samples:

1	2	3	4	5	6	7	8
O.T.I.		A		B		C	
9	10	11	12	13	14	15	16
D		E		F		O.T.I	

This entire series was composed of flies reared from the same larval culture, and an unknown sample was not replicated more than one time in any given series. Ten replications of each unknown in as many series gave the best average results. The standard insecticide designated as "Official Test Insecticide" (O.T.I.) was used in evaluating the relative toxicity of the test samples.

Separate counts of dead and moribund flies were recorded over a two-day period, and the total average kill of the four O.T.I. tests within a series was compared with the average kill of each pair of unknowns.

In making mortality counts, the cage was slightly jarred to aid in the accumulation of all affected flies at the base of the cage. These flies were then disturbed by means of a dissection needle, and if they responded slightly to touching they were designated as moribund. The unaffected flies remained within the upper portions of the cage.

When an individual test within a couplet of tests varied more than ± 9 from its mean, that particular couplet was considered too variable and of no experimental value. The de-

(*Turn to Page* 121)

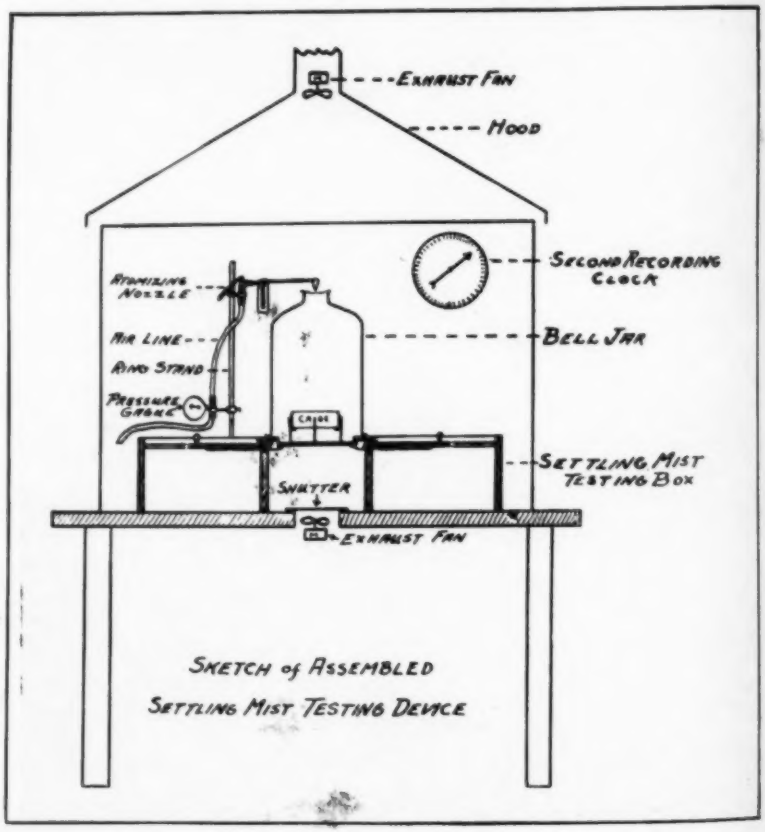


Diagram 3. Testing booth showing cage in position within the bell jar and location of fans for exhausting spray from chamber.

ROACH POWDERS . . .

What composition for poisonous and non-poisonous types in the face of war-time scarcities and restrictions?

THE best all-around roach powder is a mixture of pyrethrum and sodium fluoride. At least, this was the consensus of opinion among insecticide manufacturers and pest control operators shown by a survey made a couple of years ago.[1] These practical observations appear to be borne out by more recent published results of tests against the German cockroach which showed a 25-75 per cent mixture of pyrethrum - sodium fluoride to be the fastest, most efficient roach killer.[2]. But these mixtures, of course, depend upon an ample supply of pyrethrum, and as is well known, pyrethrum is under WPB allocation and practically none may be obtained today for the manufacture of roach powders for civilian use.

With pyrethrum unavailable at present, and rotenone dusts unobtainable, the manufacturer of roach powder has had his list of possible raw materials reduced to the fluorides, fluosilicates, borax, boric acid, and one or two other items. If he faces restrictions on the use of poisonous materials, this eliminates the fluorides and fluosilicates, leaving him a choice between borax and boric acid. Some limited quantities of compounded pyrethrum dusts and synthetic insecticide dusts have been available from time to time, but there is no regular or constant supply of these dusts assured.

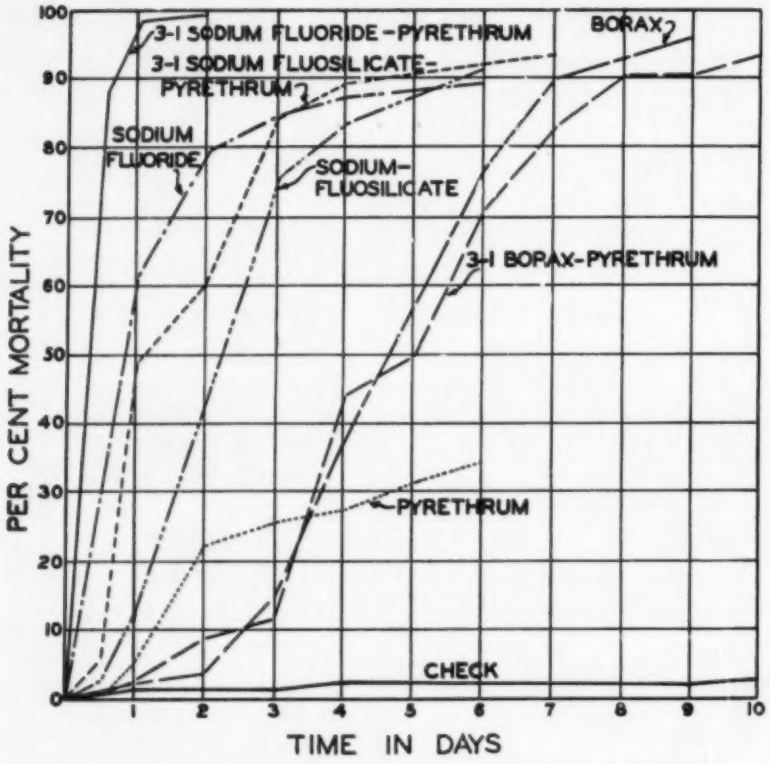
The result of restrictions on pyrethrum has been the wider use of sodium fluoride and sodium fluosilicate in roach powders. Powders which previously contained 25 to 50 per cent of pyrethrum have in many instances changed their formulas to straight fluoride or fluosilicate with percentages of inert fillers ranging from 15 to 50 per cent. Owing to an increased production of sodium fluosilicate as a by-product in certain smelting and metal refining operations connected with the war effort, the trend has been toward a wider use of the fluosilicate. Commercial sodium fluosilicate is about 98 per cent Na_2SiF_6. This material is a very effective roach killer, slightly slower in action than sodium fluoride, but equal in eventual kill. That it has a wide potential use in roach preparations and that a large tonnage of it will soon find application in other insecticides, including agricultural products, has been predicted by Roark. It is less soluble in water (about 0.5 per cent) than sodium fluoride, and accordingly is not as rapid or as dangerous a poison to warm blooded animals as the fluoride. Roach powders based on sodium fluosilicate (also commonly termed sodium silicofluoride) should be labeled, for example, in the case of a three to one mixture with an inert dust such as talc, as follows:

Active Ingredients—	*Per Cent*
Sodium Fluosilicate.....	74.00
Inert Ingredients.....	26.00
	100.00

Because sodium fluoride has been so widely used for years as a base for roach powders where a poisonous in-

A new fluosilicate roach powder by McCormick & Co., Baltimore, recently added to the well-known Bee-Brand Line, companion product to Bee-Brand Insect Powder and Bee-Brand Insect Spray.

[1] What Composition for Roach Powders? Anon. *Soap & Sanitary Chemicals*, Vol. XVI, No. 10 and 11, pgs. 92-94, 96-99. (Oct.-Nov., 1940.)
[2] Roach Powders. Edward C. Klostermeyer. *Soap & Sanitary Chemicals*, Vol. XIX, No. 2, pgs. 98-99. (Feb., 1943.)



Showing that 25-75% pyrethrum-sodium fluoride roach powders are fastest acting and most effective, and that borax in nine days will kill off 95% German roaches. Time-mortality curves for adult female Blattella germanica **(Linne) with sodium fluoride, sodium fluosilicate, pyrethrum, borax, and mixtures[2].**

gredient has not been a drawback, there is little about this product which the average insecticide manufacturer does not know. It has been and still is used all the way from the straight fluoride down to 25 per cent fluoride as a roach killer. Commercial roach powders usually run from 50 to 75 per cent content of commercial sodium fluoride which is as a rule 95 per cent NaF. Where a roach powder has heretofore contained pyrethrum, some manufacturers are replacing this latter material with an equal quantity of borax, although it is doubtful that this adds much to the real effectiveness of the powder as high kills are usually obtained with straight fluoride.

In connection with the poisonous character of the fluorides and to a lesser degree, the fluosilicates, it is interesting to note that an amendment to Federal Insecticide Act requiring as a safety measure the tinting of these materials which are normally white powders (including also compounds of arsenic) was recently introduced into the House of Representatives and was referred to the Committee on Foreign and Domestic Commerce for consideration. This coloration amendment is being sponsored by officials of the U. S. Department of Agriculture. White poisonous roach powders will probably in the course of a few months, be outlawed from interstate commerce in the United States.

If sodium fluoride is so effective alone, why has pyrethrum been used in combination with it in the past? The answer is, as any pest control operator knows, that the pyrethrum gives a quick paralysis of the roaches and shows immediate visible evidence that the product is doing its work. But the addition of the pyrethrum is not wholly psychological as some manufacturers and operators are inclined to think if their comments are to be believed. Where a mixture of 25-75 pyrethrum-fluoride will give close to a complete kill in 24 hours, tests indicate that fluoride alone gives only about an 80 per cent kill in 48 hours.[2] At the same time, used alone, pyrethrum does not approach the mortality rate which is obtained when it is used in combination with sodium fluoride. (Of course, there is pyrethrum and pyrethrum,—some may be a 0.9 powder and other material may contain 0.5 or even 0.3 per cent pyrethrins. The quality of the pyrethrum used is a very important factor. It might be that the pyrethrum used by Klostermeyer whose mortality results on roaches are shown in the accompanying graph reproduced from his recent paper, was not up to a 0.9 standard and possibly well under this figure. —Ed. Note.) Although pyrethrum, where it is used in combination with fluoride, may be used principally because of the spectacular effect which it produces against roaches, it does give a roach powder which is superior to fluoride alone.

TODAY, the problem of the insecticide manufacturer or pest control operator is complicated by lack of pyrethrum. If he does not need a non-poisonous roach powder, fluoride or fluosilicate are the ready answers. But where restrictions forbid the use of a poison or where a manufacturer desires to continue marketing a non-poisonous product, there remain for all practical purposes borax and boric acid. For use in and around kitchens, pantries, food storage buildings, etc., and in certain confined quarters such as on boats, particularly U. S. Navy vessels, where pyrethrum was formerly used, these products appear to be the only suitable materials available today.

Borax has been used straight for some years as a roach powder, and as an ingredient of these powders along with pyrethrum, or as a filler in fluoride powders. Mostly it has been the killing agent of roach powders put out to meet a low price market, and has never been looked upon very highly by insecticide manufacturers or pest control operators. It is, however, considered an active ingredient by officials of the U. S. Department of Agriculture and may be included as such on roach powder labels.

The main drawback of borax against roaches it its slowness. No appreciable kill is noted until several days have passed and the generally ac-

(*Turn to Page* 121)

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PYRETHRUM ANALYSIS

A modification of the hydrogenation method for determination of pyrethrins

By F. B. La Forge and B. B. Bendigo

Bureau of Entomology & Plant Quarantine A. R. A., U. S. Dept. of Agriculture

A METHOD for determining the pyrethrins which is based on their cleavage by catalytic hydrogenation with liberation of the corresponding acid components has been described by LaForge and Acree.[1] The volatile dihydrochrysanthemum monocarboxylic acid is separated by steam distillation, and the pyrethrin I content is calculated by direct titration of the distillate.

It was subsequently noted that the results so obtained were consistently higher than those furnished by the mercury-reduction method for the same samples. This discrepancy seems to be due to the presence of small amounts of volatile acids either present in the samples as such or liberated at some stage in the process. These acids are for the most part water-soluble.

A somewhat lower and more correct value for pyrethrin I is found if the steam distillate obtained by following the original procedure is made slightly alkaline or it may be neutralized by titrating with N/20 alkali solution as originally proposed) and is then boiled down to about half its volume to expel the acetone or alcohol used as solvent, the solution acidified with about 0.5 cc. of 6 per cent hydrochloric acid, and the dihydrochrysanthemum acid extracted with ether or, preferably, petroleum ether. The titration for the determination of pyrethrin I is then done exactly as originally described for pyrethrin II.

[1] LaForge and Acree, Soap 17 (1): 95-98, 115 (1941).

Table I—Per cent of pyrethrin I in pyrethrum oleoresin and flowers when determined by the original and modified hydrogenation methods.

Pyrethrum Oleoresin		*Pyrethrum Flowers*	
Original	*Modified*	*Original*	*Modified*
19.4	17.7	0.32	0.26
19.6	18.7	0.33	0.26
19.4	18.9	0.34	0.29
18.1	15.7	0.42	0.33
19.9	16.5	0.42	0.33
		0.40	0.28
18.6	17.1		
18.9	17.7	0.45	0.38
		0.45	0.35
19.6	17.9		
18.8	16.6	0.66	0.51
		0.64	0.53
14.7	14.3	0.64	0.53
14.1	13.0		
14.5	13.0		
16.1	13.8		
16.7	14.3		

Table I shows some results obtained with the modified method compared with those found by the original procedure.

In certain cases, as in the sampling of imported pyrethrum flowers, it is sufficient to ascertain the total pyrethrin content. This may be accomplished with a single titration if it is assumed that the pyrethrins are present in substantially equal amounts. The procedure is to combine the neutralized and concentrated steam distillate with the contents of the distillation flask, which already contains a sufficient ex-

(*Turn to Page* 107)

Table II—Per cent of total pyrethrins in pyrethrum oleoresin and flowers when pyrethrins I and II are titrated separately and together.

Pyrethrum Oleoresin		*Pyrethrum Flowers*	
Titrated Separately	*Titrated Together*	*Titrated Separately*	*Titrated Together*
27.6	25.7	1.17	1.17
27.6	28.1	1.08	1.22
25.8	26.8	1.11	1.04
34.2	37.0	0.70	0.60
33.0	35.6	0.71	0.63
35.2	34.4	0.65	0.65
27.8	32.2		
28.6	31.7		
28.3	30.7		
32.2	32.6		
31.0	33.7		
32.6	34.0		

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DISINFECTANT TESTING

Varying Phenol Coefficient Results on Tests of Certain Disinfectants

By Dr. Charles M. Brewer*

U. S. Department of Agriculture

IT has become customary to gauge the strength of a disinfectant by its phenol coefficient value; and ordinarily the labels of coal tar phenolic type emulsions and similar disinfectants bear phenol coefficient statements to indicate their germicidal efficacy. Unless the label states that some other organism has been used, the phenol coefficient is determined against *Eberthella typhosa*. In the enforcement of the Federal Insecticide Act it is required that phenolic type disinfectants be used at dilutions equivalent in germicidal value against *E. typhosa* to a 5 per cent solution of phenol, i.e., at 20 times their phenol coefficient values. Thus a disinfectant with a phenol coefficient of 5.0 should be used for general purposes at a dilution no weaker than 1 per cent. This regulation is for the purpose of allowing a reasonable margin of safety so resistant and inaccessible organisms will be killed in general practice.

Wright[6] has shown that different brands of peptones used in the composition of the culture medium will give somewhat different coefficient values. The Food and Drug Administration[5] method prescribes that the culture medium be made with Armour's peptone prepared specially for disinfectant testing purposes. This method has become generally relied upon as a means of determining phenol coefficients; and it has been shown that by this method workers in widely separated laboratories can obtain essentially the same phenol coefficient value on different samples of the same preparation.[2]

In 1940 Petroff and Schain[4] published data showing that the bactericidal properties of germicides are enhanced with the addition of detergents. Within recent years it has become a very common practice to add relatively small amounts of wetting agents to disinfectants with a resulting increase in their phenol coefficients.

It now has been brought out that the phenol coefficient determination alone may not be an adequate laboratory measure of the germicidal value of disinfectants containing wetting agents. During the past year a group of four disinfectants from different manufacturers were tested in the laboratories of the Agricultural Marketing Administration for another governmental agency. Their phenol coefficients were found to be far above the minimum coefficient specified and well above their professed coefficient values.

When the coefficients of these samples were rechecked by using the organisms from two test cultures—I and II—the results differed from each other. Test culture I gave the results previously obtained while test culture II gave lower coefficients. Both I and II were 24 hour cultures in F.D.A. media inoculated from the same source, the only difference in the media being that the peptone ingredient of culture medium II bore a different lot number, having been purchased about a year earlier than that used for making medium I. The difference between coefficients determined with test culture I and II are as follows:

TABLE 1

Disinfectant	*Phenol Coefficients — F.D.A. Culture I*	*F.D.A. Culture II*
A	9.5	5.0
B	15.0	4.4
C	17.0	5.5
D	30.0	14.4

Culture I and culture II are the same except that the peptone used in making the media bore different lot numbers.

Repeated tests showed that the two test cultures possessed the same resistance to phenol. Against alcohol test culture II showed a slightly lower resistance. No difference in the microscopic appearance of the organisms could be observed. The plate count was approximately equal when salt solution was used to make serial dilutions but test organism I showed a greatly reduced count compared with organism II when serial dilutions were made with water.

Disinfectant B was subjected to further study. When six other strains** of *E. typhosa* were cultured in medium I and medium II and used as test organisms against disinfectant B, the respective divergence of phenol coefficients were comparable to those obtained with the Hopkins strain initially used.

It was thought probable that this group of disinfectants contained wetting agents which were responsible for the peculiar variation in their phenol coefficients. Consequently two

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** Kindly supplied by Dr. F. W. Tilly, Bureau of Animal Industry, U. S. Department of Agriculture.

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synthetic detergents*** (Tergitol, Carbide and Carbon Chemical Corporation, and Vatsol, American Cyanamid and Chemical Corporation) were added in 0.1 per cent amounts to the phenol dilutions tested against test cultures I and II. In the presence of both of these wetting agents the test organism from culture medium I was killed by the higher dilution of phenol. With 0.1 per cent Tergitol present, a 1-125 dilution of phenol killed test organism I in 10 minutes while a 1-100 dilution was required to kill test organism II; 0.1 per cent Vatsol decreased the concentration required to kill *E. typhosa* from 1-90 to 1-160 in the case of the former test culture and to 1-140 in the latter. In the concentrations used neither of these detergents was germicidal for *E. typhosa*. It appeared very definite therefore that some compound of the nature of synthetic detergents was an ingredient of the disinfectants and responsible for the difference in their germicidal action against the two test cultures.

When washed organisms from test culture I were suspended in sterile medium II the same coefficient value was obtained as when washed organisms from culture II were suspended in medium I. Against these resuspended organisms disinfectant B showed a phenol coefficient of 6.6 compared with 15.0 for culture I and 4.4 for culture II. From this it would appear that the peptone in culture medium II contained some ingredient not contained in the peptone of culture medium I which counteracted the enhancing properties of wetting agents; and imparted this quality to the typhoid organisms cultured in it.

Baker and coworkers[1] found that phospholipids from various sources inhibited the action of synthetic detergents. Consequently the phenol coefficient of disinfectant B was determined with test culture I in the presence of soluble lecithin as well as Brain Liver Heart Medium (Difco). Added on the basis of 0.1 per cent brain (0.25 per cent complete medium) this preparation reduced the phenol coefficient of disinfectant B to 5.5 while 0.1 per cent lecithin reduced the coefficient to 6.6 and 0.2 per cent lecithin brought the coefficient to 4.0. With either of these sources of phospholipid added to phenol enhanced with wetting agent, the concentration of phenol required to kill test culture I was increased to the concentration required to kill test culture II.

Test cultures I cultured in medium I to which had been added 0.1 per cent lecithin or 0.25 per cent Brain Liver Heart Medium (Difco) reduced the coefficients of all four of the disinfectants below the coefficients obtained with test cultures from the unaltered medium. The results are shown in Table 2; results with test culture II are added for comparison.

TABLE 2

	Phenol Coefficient			
Disinfectant	Test Culture I	Test Culture 1-A	Test Culture 1-B	Test Culture II
A	9.5	5.0	4.0	5.0
B	15.0	4.0	7.0	4.4
C	17.0	6.5	7.0	5.5
D	30.0	11.0	16.0	14.4

Test culture 1-A is F.D.A. medium culture I plus 0.1 per cent lecithin.

Test culture 1-B is F.D.A. medium culture I plus 0.25 per cent Brain Medium (Difco).

NOTE: By using the current lot of prescribed peptone the following phenol coefficients were obtained: A 6.0, B 6.0, C 9.0, D 19.5.

The results of this investigation definitely indicate that one lot of the prescribed peptone for F.D.A. medium contained phospholipid substances lacking in another lot. These phospholipids are extremely important in the determination of phenol coefficients.

Discussion

Consideration of this report leads to the conclusion that phenol coefficient statements on certain disinfectants containing synthetic detergents are of little or no value. With a determined phenol coefficient of 15.0 for disinfectant B, it might properly be considered a safe general germicide when diluted with 300 parts of water. It was found, however, that a 1-150 dilution of this product failed to kill *Escherichia coli* in five minutes and a 1 per cent solution failed to kill pyocyaneous (*Pseudomona aeruginosa*) in 10 minutes. Incidentally a 10 per cent solution of this preparation also failed to kill *Staphylococcus aureus* in 10 minutes. Used according to customary standards, such a product may be valueless as a disinfectant or it may be an effective germicide, depending upon the composition of the peptone used in culturing the phenol coefficient test organism.

The use of peptone with known phospholipid content may become important in the germicidal testing of disinfectants containing wetting agents. However, not all phospholipid substances appear to affect different synthetic detergents alike; and there are many such detergents now available. Cupples[3] in 1940 listed over 300 individual preparations of this nature. In connection with the above investigation it was found that added Brain Heart Medium (Difco) was slightly more effective than 0.1 lecithin in lowering the phenol coefficient of disinfectant B when using test culture I; this was contrary to the effect when these enrichment substances were used in the culture medium (see Table 2). Both were approximately equal in reducing the effect of the two detergents added to phenol. But lecithin was much more active than the Brain Heart Medium when added to Zephiran, a surface-acting compound with high germicidal activity. Zephiran diluted 1-30,000 killed test culture I, and diluted 1-20,000 killed test culture II; 0.25 per cent Brain Heart Medium also reduced its germicidal dilution against test culture I to 1-20,000; but 0.1 per cent lecithin prevented a 1-2,000 solution from killing test culture I in five minutes.

The problem of finding a laboratory method for testing the germicidal properties of disinfectants containing synthetic detergents, just as reliable as the phenol coefficient method is for basic coal tar disinfectants, does not appear to be easy of solution.

Summary

Data presented show that the peptone component of the medium for culturing phenol coefficient test organisms may seriously affect the phenol coefficient obtained. This effect on the

(*Turn to Page* 107)

*** Obtained through the kindness of Dr. H. L. Cupples, Division of Insecticide Investigations, Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture.

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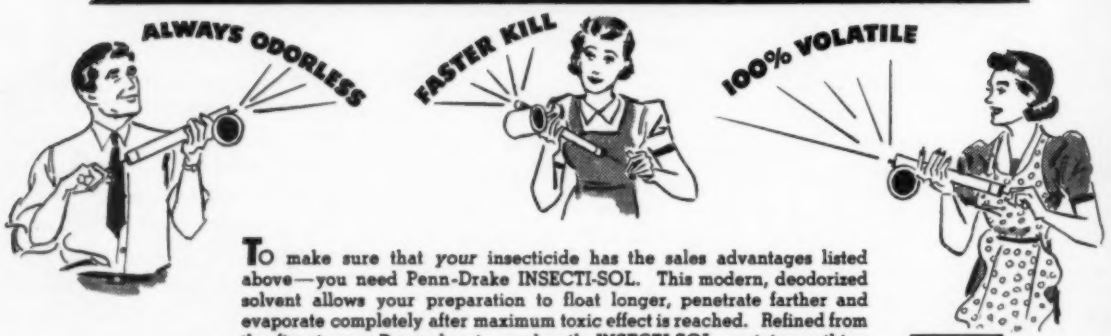

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FLY SPRAY KILL

a study of the synergistic action of N-substituted piperonylamides when incorporated in pyrethrum fly sprays

By S. I. Gertler, J. H. Fales and H. L. Haller

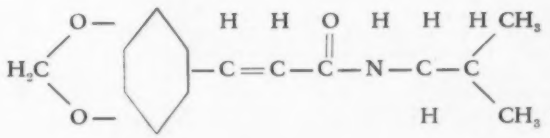
Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture

VARIOUS synthetic products have been proposed as substitutes for pyrethrum in fly sprays, but the utility of most of them is limited because they must be applied in such high concentrations as to leave objectionable residues. Their use on and around fabrics, furniture, and so forth, is especially precluded.

In an effort to conserve pyrethrum, studies have been made on insecticidal compositions containing both pyrethrum and a synthetic product. In the course of such experiments the mortality produced by certain mixtures was found to be greater than a single summation of the effects produced by each constituent. Other studies have shown that certain compounds which in solution by themselves give little or no kill, when added to pyrethrum solutions of low pyrethrin content, give a mixture of greatly increased toxicity [3, 4]. This phenomenon has been designated in the literature by such terms as "synergism," "activation," and "enhancement."

Certain naturally occurring materials have also been found to have a syngeristic effect with pyrethrum insecticides. One of the more effective products is sesame oil, the action of which was discovered by Eagleson.[1] That the increased kill obtained when it was added to solutions of low pyrethrin content in refined kerosene was due to synergistic action, and not to any insecticidal action of sesame oil, was shown by the failure of sesame oil alone to kill houseflies.

Haller et al.[2] have shown that sesame oil owes its synergistic action to the presence of sesamin, a complex organic compound. Sesamin is composed of a bicyclodihydrofuran nucleus substituted with two methylenedioxyphenyl groups. It occurs in sesame oil to the extent of only 0.25 per cent, and cannot be economically synthesized. Simple derivatives of sesamin were therefore tested for their synergistic effect with pyrethrum. For the first studies the methylenedioxyphenyl group was combined with the N-isobutylcarbamyl group, which occurs in one of the synthetic synergists available commercially. A combination of these two groupings is found in fagaramid, a constituent of *Fagara xanthoxyloides*, commonly called artar root. Fagaramid is N-isobutyl-3, 4-methylenedioxycinnamamide and is represented by the formula

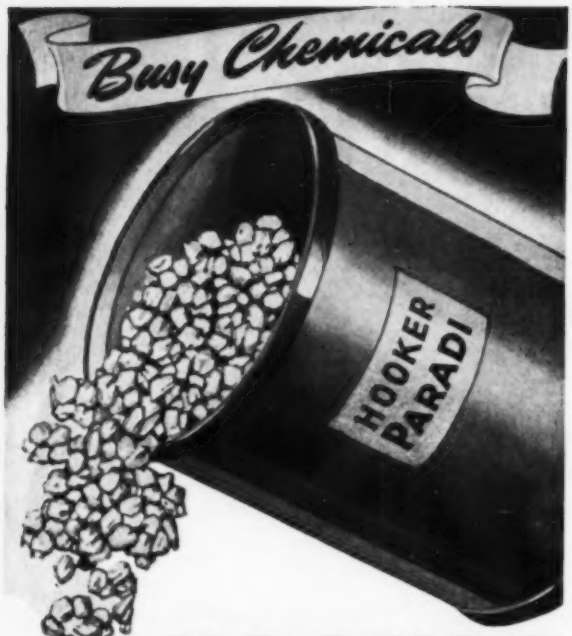


In preliminary tests against houseflies by the Campbell-Sullivan turntable method, a solution containing 0.5 mg. of total pyrethrins and 2.0 mg. of synthetic fagaramid per cubic centimeter killed approximately the same number of flies as a solution containing 1 mg. of pyrethrins per cubic centimeter.

These results made it seem desirable to determine the effect of simpler compounds closely related to fagaramid. Therefore, a series of N-substituted piperonylic acid amides were tested, also by the turntable method, and the results were evaluated statistically.*

These compounds were prepared from piperonoyl chloride by treatment with the corresponding amine according to accepted methods. In addition to piperonylamide (A) the following compounds were prepared and tested:

N-Methylpiperonylamide (A)
N-Ethylpiperonylamide (B)
N.N-Diethylpiperonylamide (C)
N-Propylpiperonylamide (B)
N.N-Dipropylpiperonylamide (C)
N-Butylpiperonylamide (B,C)
N-Isobutylpiperonylamide (C)
N.N-Diisobutylpiperonylamide (B,C)
N-Amylpiperonylamide (A,B)
N-Cyclohexylpiperonylamide (A)
N-Benzylpiperonylamide (A)
N.N-Dibenzylpiperonylamide (B)
N-Phenylpiperonylamide (A)
N-(o-Tolyl) piperonylamide (A)
N-(m-Tolyl) piperonylamide (A)
N-(p-Tolyl) piperonylamide (A)
N-Di-(2-ethylhexyl) piperonylamide (C)



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N-(o-Chlorophenyl) piperonylamide (A)
N-(m-Chlorophenyl) piperonylamide (B)
N-(p-Chlorophenyl) piperonylamide (A)
N-(o-Bromophenyl) piperonylamide (C)
N-(m-Bromophenyl) piperonylamide (C)
N-(p-Bromophenyl) piperonylamide (A)
N-(o-Nitrophenyl) piperonylamide (B)
N-(1-Naphthyl) piperonylamide (A)
N-(2-Naphthyl) piperonylamide (A)

These compounds were tested in a mixture containing 90 per cent of deodorized kerosene and 10 per cent of acetone by volume, the latter being added to increase the solubility. When the substance was sufficiently soluble, a solution containing 10 mg. per cubic centimeter was prepared. Such compounds are indicated by the letter *C*. For compounds of lesser solubility a solution containing 2 mg. per cubic centimeter was prepared (designated *B*), and if the solubility was less than this limit, a saturated solution of the compound was used (designated *A*). For each compound a solution of the same concentration containing in addition 0.5 mg. of pyrethrins per cubic centimeter was also tested.

The results showed that, when used alone in the concentration of 10 mg. per cubic centimeter, the following compounds produced a mortality at least as high as the standard pyrethrin solution:

N,N-Diethylpiperonylamide (C)
N,N-Dipropylpiperonylamide (C)
N-Isobutylpiperonylamide (C)

The following compounds, when added to the extent indicated by the letter to a pyrethrin solution containing 0.5 mg. of pyrethrins per cubic centimeter, showed a definite syngeristic effect:

N,N-Diethylpiperonylamide (C)
N,N-Dipropylpiperonylamide (C)
N-Butylpiperonylamide (C)
N-Isobutylpiperonylamide (C)
N,N-Diisobutylpiperonylamide (C)
N-Di-(2-ethylhexyl) piperonylamide (C)
N-(o-Chlorophenyl) piperonylamide (A)
N-(o-Bromophenyl) piperonylamide (C)
N-(o-Nitrophenyl) piperonylamide (B)

It will be noted that the three compounds showing toxicity to flies when used alone are all N-alkyl-substituted derivatives. These compounds also produce a pronounced synergistic effect with the pyrethrins. The limiting factor appears to be solubility. Where as much as 10 mg. per cubic centimeter of the synthetic product could be dissolved, good kills were usually obtained. Unlike the pyrethrins, however, the compounds do not possess a rapid paralytic or knockdown action.

The disubstituted aliphatic amides have the advantage that they are usually liquids and are more soluble than the solid amides. The aromatic-substituted piperonylamides, however, also showed some synergistic effect, although the concentrations usually were low. The ortho-substituted aromatic amides appeared to be more effective than the corresponding meta or para derivatives.

In general this group of compounds seems to be promising. Further work is being done to determine the effect of different concentrations and also in an attempt to find a substitute for pyrethrum that will give a knockdown effect.

[*] On the basis of about 10:1 odds, experimental error was evaluated by consideration of differences between duplicates, kills having been transformed to concentrations by means of a probit-log dosage line fitting the results obtained with two concentrations of the pyrethrins alone. Synergism was considered to be indicated when the pyrethrin concentration equivalent to the kill produced by a mixture was significantly greater than the sum of the pyrethrin concentration involved and the pyrethrin concentration equivalent to the amount of compound used.

The writers are indebted to C. M. Smith for the statistical analysis.

Literature Cited

[1] Eagleson, C. 1940. Oil synergist for insecticides. U. S. Patent 2,202,145, issued May 28.

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Disinfectant Testing

(*From Page* 103)

test culture is not detectable from the results of the phenol control.

It can be deduced from this investigation that when tested against *E. typhosa* the germicidal activity of disinfectants containing synthetic detergents is greatly altered by the phospholipid conent of the culture medium.

References

(1) Baker, Z., Harrison, R. W., and Miller, B. F. Inhibition by Phospholipids of the Action of Synthetic Detergents on Bacteria. *J. Exper. Med.*, 74, 6:621-637 (Dec.), 1941.

(2) Brewer, C. M. Referee. Report on Disinfectants. *J. Assoc. Off. Agri. Chem.*, 23, 3:557-558 (Aug.), 1940.

(3) Cupples, H. L. A List of Commercially Available Detergents, Wetting, Dispersing and Emulsifying Agents. *Publication E-504*, Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture.

(4) Petroff, S. A., and Schain, P. Enhancement of Bactericidal Properties of Well-Known Antiseptics by the Addition of Detergents. *Quart. Bull.* Sea View Hosp., 5, 4:372-384 (July), 1940.

(5) Ruehle, G. L. A., and Brewer, C. M. U. S. Food and Drug Administration: Methods of Testing Antiseptics and Disinfectants. U. S. Department of Agriculture, *Cir.* 198, 1931.

(6) Wright, J. H. The Importance of Uniform Culture Media in Bacteriological Examination of Disinfectants. *J. Bact.*, 2:315-346, 1917.

Disinfectant Emulsions

A sulfonated castor oil is used together with *ortho*-phenylphenol 10-40 per cent and terpene ether 5-15 per cent, to form a disinfectant emulsion of good stability. A. E. Badertscher, to McCormick & Co. U. S. Patent No. 2,289,476.

Pyrethrum Analysis

(*From Page* 100)

cess of hydrochloric acid, to extract both the chrysanthemum acids at once and, after washing in the usual manner, to titrate them together. In this case ether must be used as the solvent, because the chrysanthemum dicarboxylic acid methyl ester is not readily soluble in petroleum ether. The factor employed is 1.75 when the standard alkali used for titration is 0.05 N, and the formula is

$$\text{Per cent of total pyrethrins} = \frac{\text{CCs of N/20 alkali} \times 1.75}{\text{Weight of sample}}$$

Some results obtained by this procedure are shown in Table II in comparison with separate determinations of the two pyrethrins by the modified procedure described above.

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ESSENTIAL OILS *AROMATICS*

THE WAY IT LOOKS IN Washington

by

JAY A. BONWIT

OUT of a generally dark insecticide picture in Washington this month, including the myriad of government controls and restrictions on scarce insecticide materials, there emerge one or two slightly more optimistic notes. Indications which point these optimistic trends are (1) the increasing cooperation of the Army toward straightening out some of Army procurement policies in insecticides, and (2) a clarification on the insecticides supply which is likely to be made available for victory garden use.

In the first instance, the Army has agreed to use substitutes for the more critical materials wherever possible, and as a concrete example of this tendency, roach powder specifications are being considered which use a minimum amount of pyrethrum. Furthermore, Army procurement policies appear to be headed for a greater degree of stability, based on the tendency to centralize, to a certain degree, the procurement of Army insecticides. This tendency is further highlighted by the fact that there are increasing indications that Army insecticides specifications are being prepared to a greater extent by men who know both the needs and the problems involved.

Increased emphasis on the cultivation of victory gardens throughout the country has naturally created an acute problem in view of the shortness in supply of the ingredient materials which are efficient, safe, and easy to use by amateur gardeners,—pyrethrum and rotenone. It is estimated that there will be some 18,000,000 victory gardens started this spring and summer, and the industry is faced with the problem of providing these 18,000,000 backyard gardeners with small package insecticides if the victory garden program is to be successful.

The problem, accented as it is by the economic need for the produce of these gardens in view of food shortages, presents a definite challenge to the industry, particularly since the research agencies of the Department of Agriculture are reluctant to recommend insecticide combinations in the face of rotenone and pyrethrum shortages.

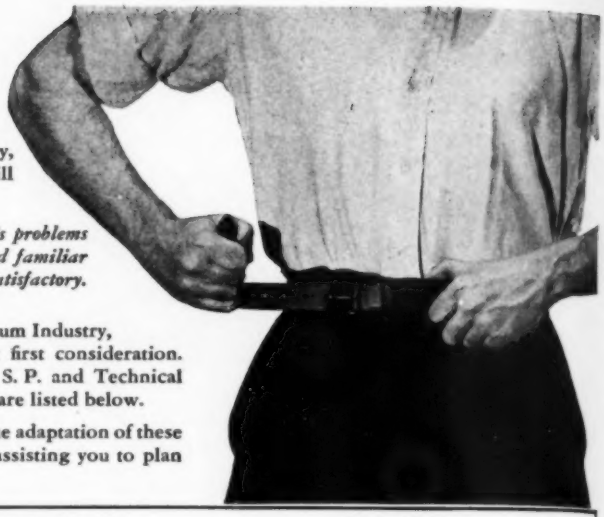
This unrealistic attitude obviously creates a difficult situation for the bulk of the victory garden insecticide production. On the other hand, it may be considered responsible for the fact that certain quantities,—though very limited,—of pyrethrum are being made available for the production of insecticides for victory gardens, and also that restricted amounts of rotenone have already been made available. It is estimated that between one and two million small size packages can be produced from the rotenone already set aside, to be used for victory garden crops of peas, beans, corn and the cole group other than cabbage. In addition, it has been agreed to allocate restricted amounts of pyrethrum for small package goods for home gardens, and this supply is expected to produce about a million and a half packages.

Nicotine insecticides, while considered of limited utility and safety for amateurs, will nevertheless, it appears, be available to the extent of another four million small packages. This leaves approximately 10,000,000 packages of insecticides still to be provided for from mixtures of other materials, and this is where the problem of the industry becomes apparent. It is here that the Food Distribution Administration particularly desires to enlist the cooperation of the industry.

In all events, while it can be expected that limited quantities of pyrethrum will be made available, the tremendous demands of the Government and the continued U-boat threat to shipping make it mandatory on the industry to seek and use substitutes wherever possible.

A GREAT deal of misunderstanding has developed over P-140, the War Production Board order controlling distribution of shipping containers. Since most of the chemicals used by the industry are covered by the order, many manufacturers have

as we tighten our belts . . .



Cheerfully—eagerly, because it's our contribution to Victory, all of us have accepted the fact that for the duration, we will have to tighten our belts and "do without."

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felt that all business has to be rated. The order assigns particular preference ratings for wood and fibre containers. It does not mean, however, that a manufacturer must have a rating in order to buy his containers.

WPB recommendations on this score are that manuacturers, before applying for preference ratings for the type of containers which they are accustomed to using, should first find out what packaging of the least critical materials is available. For example, multi-wall paper bags or paper boxes might, in a particular instance, be as suitable as fibre drums, and being available in greater quantities, could be acquired without a preference rating.

In cases where priorities are necessary to obtain suitable shipping containers, the order provides AA-4 ratings to the manufacturer, who then extends his rating to the manufacturer of the containers. If this rating is not high enough to assure delivery of the containers, application for a higher rating should be made on Form PD-802.

Another packaging development is contained in General Conservation Order M-286, which prohibits the use of glassine, greaseproof and vegetable parchment in wrapping and packaging soaps.

IN the soap field, reports of further curtailments and restriction orders are still circulating around Washington, particularly on the question of fats and oils limitations. In most of these, it appears that the Department of Agriculture Fats and Oils Branch is giving consideration to these limitations, but at this writing they do not appear in immediate prospect. It is indicated that a restriction requiring the use of more non-fat ingredients in soap products is under discussion, as is the allocation of fatty acids. While nothing appears likely for the immediate future along these lines, active consideration is being given them because of the realization by Government officials that something must be done soon to make the reduced available supply of fats and oils go as far as possible.

The Food Distribution Administration is also attempting to iron out the difficulties and misunderstandings which arose over the distribution of the so-called "victory" soap to Puerto Rico. The entire proposition is being placed before the industry for its consideration, and the Government has submitted about half a dozen plans for the industry's advice. Major problem is to develop the machinery for future sales which will be satisfactory to all concerned parties, and it is hoped that cooperation between the FDA and the industry will produce the desired results.

One of the problems discussed at a recent industry advisory committee was the subject of the availability of soap for the rubber program. The importance of this phase of the war effort was stressed, and it appears that the soap industry will be able to supply the soap in the amount required.

As the problem of manpower becomes increasingly acute, the industry, while its labor supply is protected to a degree, must be prepared to face larger drains on its working force. Selective Service recommends that local draft boards should be fully advised on the essentiality of key men, and officials have declared that it is the patriotic duty of essential industries to seek deferment of essential workers. However, it is also recommended that replacements should be trained now for employees who are liable for military service.

The industry's contribution to the saving of transportation space is apparent in the figures on railroad car savings, which show that soap manufacturers released about 50 per cent of the tank cars and from 35 to 40 per cent of the box cars through a program of increased loading, faster unloading and dispatching of cars, and also by the use of trucks and water transportation.

Jap Beetle Insecticide

The Japanese beetle is said to be controlled effectively by spraying with a patented spray mixture based on soaps, corrosive sublimate and nicotine. The formula is as follows:

Rosin	10 lb.
Caustic lye	1 lb.
Fish oil soap	1 lb.
Corrosive sublimate	1 lb.
Nicotine sulfate	1 oz.

The first three ingredients are boiled with 10 gallons of water. The corrosive sublimate and nicotine sulfate are then added in a further 20 gallons of water. For spraying fruit trees, hardy shrubs, grass and weeds, it is recommended that the mixture should be diluted with two parts of water. For beans and other delicate plants, it is diluted with three or four parts of water. *Soap, Perfumery & Cosmetics* 16, 20 (1943).

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Para Against Fly Larvae

Laboratory tests showed that 249.4 mg. of paradichlorobenzene per 100 grams of treated food was quite toxic to the larvae of houseflies, while 1234.6 mg. per 100 grams of food produced complete mortality. The medium lethal concentration was determined as 430.5 mg. per 100 grams of food. In open and closed garbage pails 497.5-1234.6 mg. per 100 grams of food gave 100 per cent mortality of the larvae. The compound was applied in a layer over the food surface. The toxic effects of paradichlorobenzene are the result of a combined action as fumigant and stomach poison. H. C. Manis, A. L. Dugas and Irving Fox. J. Econ. Entomol. 35, 662-9.

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Insect Damage to Grain

According to one estimate, insect pests cause damage to stored grain and cereal products in the U.S.A. to the extent of $300,000,000 a year. This becomes very important in war time, not only on account of the shipping space involved, but also because grain has often to be stored under unfavorable conditions which render it particularly liable to infestation. Large quantities of grain were destroyed by weevils in Australia in the last war, and the risk of a like disaster exists now and may well become great in the post-war distribution of food in Europe.

It has long been known that a simple method of protecting such foodstuffs is by admixture with certain inert, nonpoisonous dusts, such as silica or rock phosphate. The action of these dusts does not depend on any chemical property but on their physical nature, particularly the small particle size and the intrinsic hardness of the material. Their killing power for insects depends on the fact that they promote loss of

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moisture, which sooner or later results in death by desiccation since insects living on dry food cannot make good the water deficiency the dust creates. J. A. Kitchener, P. Alexander and H. V. A. Briscoe. *Chemistry and Industry* 62, 32-3 (1943).

Phenolic Sheep Dips

In liquid and paste phenolic sheep dips, soap is generally the emulsifying agent, the dip then being of the homogeneous or "black fluid" type, becoming an oil-in-water emulsion when diluted with water. Liquid dips are also made as two-phase emulsions, known as "white fluids," glue or peptized casein being the usual emulsifier. Phenolic sheep dips are made on the basis of creosote or cresylic acid or mixtures thereof, dependent on the desirable ratio of neutral tar oils to phenols and upon other factors. These dips are used in enormous quantities for the control of such parasites of sheep as the sheep scab mite, keds, lice, etc. G. A. Freak. *Chem. and Industry* 61, 526-9 (1942).

Organic Halide Sprays

A small laboratory chamber test for determining the toxicity of aerosols to the housefly, *Musca domestica*, is described. The toxicities of 39 organic halides as aerosols were determined. Some of the more complex compounds such as 3-chloroacenaphthene, 2-chlorofluorene, and 9-bromophenanthrene, were effective at 0.01-0.02 pound per 1,000 cubic feet. Others like methyl bromide, which are highly volatile and do not form aerosols, cannot be used effectively by this method. Lyle D. Goodhue, W. N. Sullivan and J. H. Fales. *J. Econ. Entomol.* 35, 533-6.

Added Rotenone Source

The seeds and roots of the shrub, *Millettia pachycarpa Benth*, have long been used as a fish poison, insecticide and drug in Yunnan, China. The active constituents are rotenone and rotenoid compounds. Laboratory tests were made on adult houseflies, imported cabbage worms, larvae of the China-grass butterfly, and silkworms. Acetone extracts of the seeds were most effective against houseflies, while alcoholic extracts were most effective on cabbage worms. The seeds appear to contain some active constituents besides rotenone. Water extracts were also toxic to houseflies, cabbage worms and the butterfly larvae. The seeds are considered promising as a source of insecticidal material. Shin Foon Chio, Sping Lin and Yee Som Chui. *J. Econ. Entomol.* 35, 80-2 (1942).

Liquid Insecticide

A liquid for destroying insects comprises naphthalene and paradichlorobenzene dissolved in a common solvent such as white spirit. C. Wright-Robb, to Corporate Industries Ltd. Canadian Patent No. 409,192.

Active Principles Pyrethrum

THE question as to whether or not there are additional active principles in pyrethrum flowers other than the pyrethrins is discussed in a recent communication from H. L. Haller and F. B. LaForge, Bureau of Entomology and Plant Quarantine, Agricultural Research Administration, U. S. Department of Agriculture. Messrs. Haller and LaForge consider specifically the specific claim by Roy and Ghosh[1] that they have demonstrated the presence in pyrethrum flowers of an insecticidal principle other than the pyrethrins, generally regarded as the only active constituents. The principle, designated as *X*, is said to act upon insects in the same way as do the pyrethrins, and is reputed to occur in larger amounts in flowers with a high pyrethrin content than in those with a low one. These conclusions, say Messrs. Haller and LaForge on the basis of recent work of their own, are hardly warranted.

Four extracts containing pyrethrins were tested—a commercial extract, two prepared from *Chrysanthemum cinerariaefolium*, and the fourth from *C. roseum*. The pyrethrins in these extracts were determined by the Seil method. This method is based on the saponification of the pyrethrins with alcoholic potash with the formation of the chrysanthemum acids, the barium salts of which are soluble, whereas accompanying acids yield insoluble barium salts. It follows that any acids whose barium salts are soluble would be included in the titrations from which the pyrethrins are calculated. The volatile acids that do not form insoluble barium salt compensate for a certain loss by decomposition of chrysanthemum monocarboxylic acid. The pyrethrin content found by this method in extracts prepared from *C. cinerariaefolium*, the only species of importance commercially as a source of the pyrethrins, correlates satisfactorily with the number of insects killed.

Recently it has been shown that pyrethrolone, the keto alcohol common to both the pyrethrins, occurs also to a small extent in *C. cinerariaefolium* esterified with linoleic and palmitic acids.[2, 3] The extent to which esters of this type occur may vary widely with the species of flowers. It is also possible that the chrysanthemum acids occur in some species of pyrethrum flowers esterified with alcohols other than pyrethrolone. Such esters, a number of which have been prepared synthetically, and which have been for the most part of little value as insecticides, would be included as pyrethrins in the Seil determinations. It is quite possible that *C. roseum* may contain esters of this type, or at least esters yielding acids whose barium salts are soluble, and the anomalous results reported by Roy and Ghosh may be accounted for in this manner.

References

[1] Roy and Ghosh, Nature [London] 150: 153 (1942).
[2] LaForge and Haller, J. Org. Chem. 2: 49 (1937).
[3] Acree and LaForge, J. Org. Chem. 2: 308 (1937).

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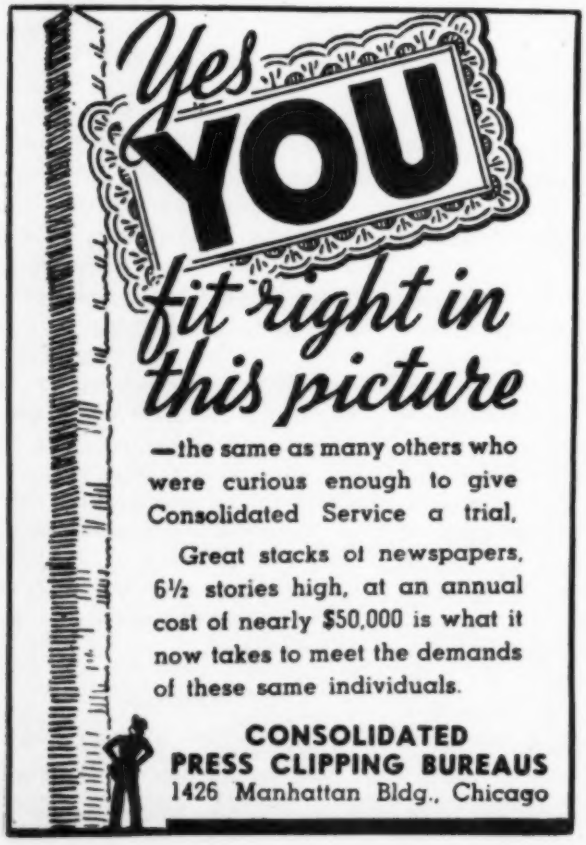

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NEWS

New Rochester Germicide V.-P.'s

Herbert W. Drury, New England sales manager for Rochester Germicide Co., Rochester, N. Y., and Henry C. Provost, manager of the Rochester area for the firm, were appointed vice-presidents at the annual meeting of the Board of Directors, in Rochester, March 11. Mr. Drury, who has been with the company since 1918, will remain in his present capacity. Mr. Provost joined the company as a salesman in 1920 in the New Jersey area, and was transferred to his present position in the Rochester area as sales manager, which position he will retain.

R. C. Kelly in War Work

Robert C. Kelly, for a number of years sales representative in New England and Eastern Canada for John Powell & Co., pyrethrum importers, New York, and other suppliers, is no longer representing John Powell & Co., and is now associated with a Boston shipbuilding company. Prior to establishing his own office in Boston, Mr. Kelly was a vice-president of John Powell & Co., and made his headquarters in New York. He was chairman of the BIMS of Boston.

F. P. Adamski Leaves Tumbler

Frank P. Adamski, formerly chief chemist for J. A. Tumbler Labs., Baltimore, has resigned that position to join the "State Use Industries" soap and sanitary chemicals division at the Maryland House of Correction, Jessups, Md., as chemist and superintendent.

Curlett Heads Food Group

John N. Curlett, vice-president of McCormick & Co., Baltimore, and president of the National Association of Insecticide & Disinfectant Manufacturers, was recently appointed Executive Director of the Food Industry War Committee, Washington, D. C. This Committee was set up to deal with all problems affecting the food situation

JOHN N. CURLETT

and is composed of representative manufacturers, wholesale intermediary and retail food distributors of all sizes and types from many parts of the country. Mr. Curlett was formerly with the Packaged Foods Section, Food Supply Branch of the War Production Board. His new address is Room D, Chamber of Commerce Building, Washington, D. C., and his telephone number Executive 3026.

Apple Succeeds Kratsch

Directors of the National Sanitary Supply Association, meeting in Chicago, March 22, selected H. A. Apple, of Milwaukee, to handle the organization's secretarial job. Mr. Apple, who is publisher of *Brooms, Brushes and Mops*, succeeds to the post made vacant by the death of Edmund Kratsch. Dates for the Association's annual convention were definitely set for May 24, 25 and 26, one week later than previously announced, with the Morrison Hotel, Chicago, as the meeting place. Marshall H. Magee, president of the organization, said convention speakers would be largely drawn from Washington war agencies, in an effort to clarify understanding of the latest regulations covering materials, prices, labor, transportation and other vital subjects. A trade exhibit will also be staged, at which manufacturers are being asked to feature the "war babies" developed as replacements for tools and materials no longer available.

Entomologists Meet At Purdue

The annual conference of the North Central States Entomologists was held at Purdue University, Lafayette, Ind., March 25 and 26. Among the topics of particular interest discussed at various sessions were the following: "How is insect control work being conducted in army camps and among our troops in foreign countries?" by F. C. Bishopp, U. S. Department of Agriculture; "Aerosol bombs, are they irritating? What is the field for their use?" by W. P. Flint; "What materials will be commercially or experimentally available this year as substitutes for war-scarce insecticides?" by S. A. Rohwer; "A summary of progress in insect control in 1942" by C. H. Richardson; "New methods of controlling cockroaches" by S. Marcovitch, J. M. Hutzel and G. E. Gould.

Raise Imported Cresylic Ceiling

An increase in the price ceiling on imported grade A cresylic acid was announced by the OPA on March 18, moving the top price up to 72.8 cents per gallon, from the previous ceiling of 70 cents which still applies on grade B cresylic. Practically the only source of imported cresylic acid has been Great Britain, which up until now has been shipping only grade B. With a limited amount of the higher grade now available for export, the above adjustment in price ceilings has been considered advisable, recognizing the same price differential prevailing in the British market. Domestic cresylic acid sells at about 25 per cent under the imported product, but is in short supply.

Hercules Gets Award

Hercules Powder Co., Wilmington, was awarded the trophy for the best use of business paper advertising in 1942 by the Chicago Business Papers Assn. at a recent meeting in Chicago.

Aerosol Insecticide Publicity

An American soldier demonstrates the use of an aerosol insecticide packed in a container made by Westinghouse Electric & Manufacturing Co., Springfield, Mass. There has been considerable mystery about the development of these aerosol insecticides for the Army, as *Soap & Sanitary Chemicals* found out some months back when we first checked into the facts. At that time, incidentally, the whole story was strictly a "military secret," we were told. Our article was frowned upon by the Surgeon General's Office and we were called to task by W.P.B. for publishing "military" information. Now, it appears, the development is not a "military secret," and pictures and publicity releases of the "health bomb" have been sent widespread, with the lion's share of the credit claimed for the Westinghouse engineers.

Just to set the record straight, we want to point out that the development was basically one of the insecticide industry. Goodhue and others at the Beltsville Station of the U. S. Department of Agriculture did the original research work, and the program was translated into commercial practicality by the development of an adequately pure pyrethrum extract, first by Dodge & Olcott Co., and later by other manufacturers of pyrethrum concentrate. Westinghouse's part was to design the container and work out a method of packaging. Incidentally, similar units for dispensing aerosols are also being produced by Pennsylvania Engineering Co., Philadelphia, and by Armstrong Engineering Co., Los Angeles.

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New Pyrethrum Order Due

A newly amended pyrethrum order replacing Order M-179, is expected momentarily. Among other changes it is unnecessary for applicants seeking permission to use pyrethrum for purposes not listed in the order to write individual letters to WPB. Instead applicants are asked to tell their supplier how the material will be used when making application.

Insecticide Coloration Bill

The exact text of the new Senate Bill (897) introduced March 19, in the U. S. Senate by Senator Bailey, to amend the Insecticide Act of 1910, so as to provide for the protective coloration of white powdered poisonous insecticides has just been received by the office of the National Association of Insecticide & Disinfectant Manufacturers. The new bill which was read twice and referred to the Committee on Commerce, reads as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that Section 7 of the Insecticide Act of 1910 (36 Stat. 331; 7 U.S.C., 1940 edition, 130) be amended by striking the period at the end of said section, inserting a colon in lieu thereof, and by adding the following: "Provided, however, that any white powder insecticide or fungicide containing arsenic in its elemental form or in any of its combinations, or fluorine in any of its combinations, shall, unless deemed unnecessary by the Secretary of Agriculture for the protection of the public health, be deemed to be adulterated unless it is distinctly colored in accordance with regulations promulgated by the Secretary of Agriculture. The Secretary of Agriculture is hereby authorized to make and promulgate rules and regulations for carrying out the provisions of this proviso and to specify the colors and the compounds or substances to be used to produce such colors."

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Campbell Back At Ohio State

Dr. F. L. Campbell, former professor of entomology at Ohio State University, who is on leave of absence, was recently recalled from the Office for Agricultural War Relations of the U. S. Department of Agriculture, Washington, D. C., and is now working as executive assistant in the University Research Foundation. Dr. Campbell is still on leave from the Department of Zoology and Entomology. Dr. C. C. Hamilton of Rutgers is taking Dr. Campbell's place in Washington. Dr. H. H. Shepard of the University of Minnesota is assisting Dr. Hamilton.

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Oneida Chemical New Quarters

Oneida Chemical Co., sanitary products, 760 Blandina St., Utica, N. Y., is now located at 1215 Park Ave.

NAIDM War Meeting In Toronto, June 7-8

A WAR conference of manufacturers of insecticides, disinfectants, chemical specialties and allied sanitary products will be held in Toronto, Canada, at the Royal York Hotel, on June 7 and 8, according to an announcement by H. W. Hamilton of the Koppers Company, secretary of the National Association of Insecticide & Disinfectant Manufacturers. Solution of problems growing out of the war, and ways and means of increasing production and facilitating movement of these materials to the armed forces and to war industry will be the sole consideration of discussions at the meeting. General sessions will be held only in the mornings of the two-day gathering with afternoons and evenings being given over to special group and committee conferences on war specifications, use of substitute materials, critical raw materials, shipping and cross hauling, container and packaging problems, sanitation problems of the armed forces, and related topics.

At a meeting of the Board of Governors of the N.A.I.D.M. in New York, on March 4, plans for the Toronto industry war conference were discussed. The program will be in charge of J. L. Brenn of the Huntington Laboratories, Huntington, Ind., and G. H. Wood of G. H. Wood & Co., Toronto. In the light of present conditions, an invitation to all insecticide, disinfectant, and sanitary supply manufacturers in both Canada and the United States, as well as government officials in both countries, to attend will be extended. Further tentative plans call for the 30th annual meeting of N.A.I.D.M. to be held at the Hotel New Yorker, New York, on December 6 and 7, conditions permitting.

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Conner N.A.I.D.M. Representative

John D. Conner who has been associated with John B. Gordon, head of the Bureau of Raw Materials for the Fats and Oils Industries, Washington, for several years past, has been appointed Washington representative for the National Association of Insecticide & Disinfectant Manufacturers. His offices are located in the National Press Building, Washington. Mr. Conner is a Texan, graduate of Texas Christian and Baylor Universities with a law degree from Washington University, and a member of the bar in the District of Columbia. He succeeds the late Henry C. Fuller who represented the N.A.I.D.M. in Washington for many years.

JOHN D. CONNER

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File Suit On Lethane Patent

To clarify the patent situation in organic thiocyanate insecticide materials, Hercules Powder Co., Wilmington, Del., filed suit on March 29 against the Rohm & Haas Co., Philadelphia, in the United States District Court of Delaware asking for a declaratory judgment against Rohm & Haas Co. Hercules seeks a judgment, according to the complaint, declaring that the sale of insecticide toxic agents, including those sold under the trade-name of "Thanite," and their use in the manufacture of insecticides, do not infringe the Rohm & Haas patent No. 1,808,893 covering "Lethane" and other aliphatic thiocyanates. The action also asks for further judgment to declare void claims 1, 2, 3, and 7 of this patent. It is also alleged in the complaint that Rohm & Haas Co. has used the patent in violation of the Anti-Trust Laws and injunctive relief and damages are sought by Hercules on this ground.

Lethane Patent Suit Statement

Following the filing of a suit by Hercules Powder Co., Wilmington, against the Rohm & Haas Co., Philadelphia, involving Heckert Patent No. 1,808,893 for "Lethane" insecticide materials, the following statement was issued April 1 by Rohm & Haas Co.:

"This suit is for a declaratory judgment holding that our patent is invalid and, if valid, is not infringed. The Bill of Complaint makes a distinction between insecticides and toxic agents for insecticides, and alleges that the patent covers only finished sprays and not the insecticidal agents used in them. On the basis of this distinction it is also alleged that we have misused our patent in not granting licenses to spray manufacturers apart from the implied license that goes with the sale of our insecticidal concentrate, Lethane.

"The Heckert patent is one of our early patents which resulted from the fundamental research conducted in our laboratories on synthetic organic insecticides. Another well known result of this early, fundamental research is the Peet-Grady method of testing insecticides, a method which is now the standard testing procedure used throughout the whole insecticide industry. The insecticidal concentrates we market under the trade name 'Lethane' are manufactured and sold under the patent. They were first introduced in 1930 and for many years afterward were the only synthetic organic insecticides commercially available. After our pioneering efforts in the development of a synthetic organic insecticide industry began to show results, other types of synthetic organic materials appeared on the market but this is the first instance in which the validity or scope of the Heckert patent has ever been questioned.

"The suit has been brought after some months of negotiations between ourselves and Hercules during which a license proposal submitted by us to Hercules at their request was refused by them."

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Mosquito Exterminators Meet

The thirtieth annual meeting of the New Jersey Mosquito Extermination Association took place March 10-11-12, at the Seaview Country Club, Atlantic City, N. J.

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Insecticide and disinfectant manufacturers were well represented at the recent annual Drug Dinner in New York, held at the Waldorf-Astoria, March 4. The Board of Governors of the NAIDM met the same day and later attended the dinner in a group. Photo by Charles Opitz.

Talks on Castor Insecticide

The part played by castor oil in the war effort was again stressed by J. Edmund Good, vice-president of Woburn Degreasing Co. of N. J., Harrison, N. J., at the March 25 meeting of the National Farm Chemurgic Council, Chicago. Pointing to new developments in the all-important field of insecticides to protect vitally needed crops, Mr. Good singled out "Spra-Kast," made by Woburn from a castor oil base. This new insecticide has been known in the trade for some time, and is being used to guard potato crops in Maine, and citrus fruit trees in Florida. Due to curtailment of other insecticide bases through importation difficulties, Mr. Good advocated the large scale planting of castor beans as one means of alleviating the raw materials shortage for insecticides.

At the same meeting, C. A. Meyers, vice-president of Dodge & Olcott Co., essential oils, New York, discussed "The Distillation of Essential Oils." Dr. Ernest Guenther, vice-president and chief research chemist of Fritzsche Brothers, essential oils, New York, reported on a world wide survey of essential oils. Advising the widespread planting of cork oaks in the United States, Dr. Giles B. Cooke, of Crown Cork & Seal Co.'s Baltimore research department, said that experimental plantings showed that the cork produced in this country was the equal of that produced in Spain or Portugal, and may be used interchangeably with the foreign products.

Honorary LL.D. for McCormick

Charles P. McCormick, president of McCormick & Co., Baltimore, and former president of the National Association of Insecticide & Disinfectant Manufacturers, was the recipient of an honorary degree, Doctor of Laws, conferred by Presbyterian College, Clinton, S. C. at exercises on March 8. Mr. McCormick was one of the two business leaders in the South who were awarded honorary degrees, the other being Charles A. Cannon, president of Cannon Mills. Mr. McCormick is a director of the U. S. Chamber of Commerce and also a director of the Federal Reserve Bank of Richmond.

NAIDM Gets Rule on P-140

In connection with the recently issued Preference Order P-140 rating containers for products listed, the NAIDM inquired of the Wooden Container Section, Containers Division, WPB, Washington, D. C., whether any rating was indicated for manufacturers of insecticides, disinfectants and other sanitary products. This is the reply received, March 15: "It may be possible for your membership to fall under List 3, Items 6 or 11, or List 4, Item 9 of P-140. If these do not apply, we would suggest filing Form PD-802, giving complete details." List 3 carries an AA-3 rating. Item 6 is "Chemicals except those in List 4." Item 11 carries an AA-4 rating. Item 9 is a long list of chemicals which includes paradichlorobenzene, borax, sodium chloride. Item 22 is "petroleum products."

Vulcan Elects McMahon V.-P.

At a recent meeting of the board of directors of Vulcan Stamping & Mfg. Co., Bellwood, Ill., George E. McMahon was elected vice-president in charge of manufacture. Mr. McMahon, who has been in complete charge of the parent Bellwood plant where new steel shipping containers are manufactured and the Hillside plant where pails and drums are conditioned for reuse, has been with Vulcan since he left school.

Modern-Wa Soap Co. Moves

Modern-Wa Soap Co., manufacturers of soaps, compounds, floor waxes and furniture polish, 1605 Wade St., Indianapolis, Ind., recently moved to 2130 Shelby St.

Agric. Insecticide Meeting

Agricultural Insecticide & Fungicide Association will meet at the Hotel Biltmore, New York, on Thursday and Friday, April 15 and 16.

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Table 1.—Comparative Tests to Houseflies by the Settling Mist and Peet-Grady Methods of Plant Materials

Table 1.—Comparative Tests to Houseflies by the Settling Mist and Peet-Grady Methods of Plant Materials

Sample[1]	Concentration lb./gal.	Settling Mist Method: No. Tests	No. Flies	Av. % Kill: O.T.I.	Av. % Kill: Sample	Knockdown: 3 min.	Knockdown: 10 min.	O.T.I. Evaluation	Peet-Grady Method: No. Tests	No. Flies	Laboratory A: Av. % Kill: O.T.I.	Laboratory A: Av. % Kill: Sample	Laboratory A: Knockdown: 2 min.	Laboratory A: Knockdown: 3 min.	Laboratory A: Knockdown: 5 min.	O.T.I. Evaluation	No. Tests	No. Flies	Laboratory B: Av. % Kill: O.T.I.	Laboratory B: Av. % Kill: Sample	Laboratory B: Av. % Knockdown: 3 min.	Laboratory B: Av. % Knockdown: 5 min.	Laboratory B: Av. % Knockdown: 7 min.	Laboratory B: Av. % Knockdown: 10 min.	O.T.I. Evaluation
A	½	20	670	37.6	43.7	97	100	+ 6	10	974	43	74	65	78	92	+31	4	2016	56.9	73.4	40	51	62	83	+16.5
A	1	20	682	43	91.5	99	100	+48	10	993	49	82	72	80	91	+33	4	2225	56.9	91	42	45	80	92	+34.1
B	½	20	710	38.8	25.9	94	99	—13	10	964	45	72	60	72	87	+26	4	2227	56.9	61.4	31	44	58	75	+ 4.5
B	1	20	700	38.2	79.3	99	100	+41	10	984	43	83	59	72	84	+41	4	2259	56.9	82.9	31	47	69	88	+26
C	½	20	710	40.3	52.5	98	100	+12	10	969	40	69	53	59	81	+30	4	2185	56.9	76.5	36	55	72	89	+19.6
C	1	20	720	40.3	87.7	97	100	+47	10	976	43	78	53	64	87	+34	4	2225	56.9	87.5	41	60	75	91	+30.6

[1] Plant materials extracted with kerosene at two levels of concentration.

Rapid Insecticide Testing

(*From Page 96*)

viation of the average kill of each unknown from the O.T.I. indicated the value of the insecticide. An expression of the results as established by the National Association of Insecticide and Disinfectant Manufacturers may be employed in which different grade equivalents are designated.

Discussion:—To gain some information as to the merits of this testing method compared with the official Peet-Grady testing procedure, samples of plant extractives in kerosene solution were tested comparatively. The Peet-Grady tests were made by two reputable commercial laboratories. From the results of these tests (Table 1), it would appear that the settling mist procedure described has a wide range of evaluation, and a sharp degree of differentiation in toxicity as indicated in the results obtained from three samples at different levels of concentration. It is also evident that the settling mist procedure is sensitive to knockdown evaluations.

This procedure is especially adapted to laboratories with a limited amount of space, and the equipment is relatively inexpensive to construct. A minimum of labor and time is required to produce a large number of tests.

Roach Powders

(*From Page 98*)

cepted figure for the killing time of borax powders among pest control operators is a full week. The accompanying chart, however, shows that more than a 95 per cent kill was obtained at the end of the ninth day with straight borax against German cockroaches. The addition of 25 per cent pyrethrum to borax showed slightly less effective results than the use of borax alone, according to Klostermeyer. (Chance of a breakdown of the pyrethrins in the presence of alkaline borax and moisture are possible. Unless this powder were tested immediately upon mixing, there might be loss of pyrethrins. The chart would indicate that this could have taken place.—Ed. Note.)

Interest in boric acid which found some use in roach powders as far back as 25 years ago, has recently been revived by F. L. Campbell[3] who appears to prefer this material to borax. Discussion of the subject with pest control operators indicates that their opinion of boric acid as a roach control material is not high. Nevertheless, in the present situation and in the absence of pyrethrum, it may have possibilities.

To summarize and answer the question as to what can be used in roach powders under present war conditions: (1) if poisonous character is not a drawback, use sodium fluoride or sodium fluosilicate, approximately 75 per cent, with the balance talc or other inert filler; (2) if a non-poisonous powder is required, use powdered borax or boric acid; if some pyrethrum or pyrethrum dust is available, use 10 to 20 per cent of this latter in combination with 80 to 90 per cent boric acid. (Whether these pyrethrum dusts break down quickly in an intimate mixture with borax is something of interest yet to be determined.) (3) Investigate the possibilities of dusts made from any one of several synthetic insecticide materials against roaches. These have found growing use in agriculture for dusting. They are, however, on the whole rather in scarce supply owing to heavy demand for liquid insecticides, stock sprays, etc. All told, from the angle of supply, the only sure bets appear to be the fluorine and boron compounds.

[3] Use of boric acid in roach control. Dr. F. L. Campbell. Address before Natl. Pest Control Assn., Pittsburgh, Oct. 26, 1942.

Germicidal Indian Oils

Certain essential oils from Indian plants possess marked antiseptic properties. This is of importance in India, because of the difficulty there in obtaining the higher fractions of coal-tar derivatives for manufacturing disinfectants with high Rideal-Walker coefficients. When tested against *Bact. typhosus*, the more active oils showed the following disinfectant power:

Oil	Color	Carbolic Coefficient
Ocimum basilicum	light brown	7
Ocimum sanctum	green	6
Ocimum sanctum	red	3

Four other oils tested showed coefficients just over one. *Perfumery & Essen. Oil Record* 34, 18 (1943).

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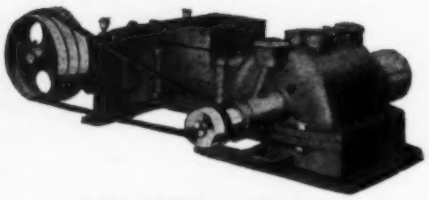

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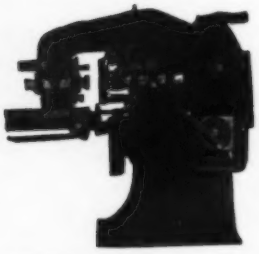

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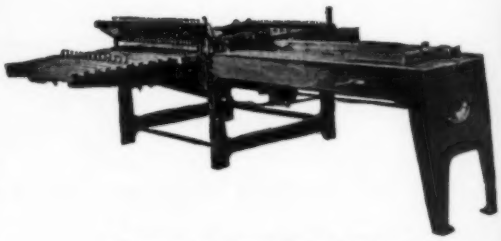

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Please be informed that the firm of my late husband which did business under the name of James J. Lax Company, New York, was sold March 27, 1943. This is to serve notice that I am in no way connected with the company that has taken over the business and hereby state that I am in no way to be regarded as responsible for any of the debts that may be incurred by the firm now trading under the name of James J. Lax. —Laura Lax, Administratrix.

Soap Materials—Man over draft age with 25 years' experience in oils, fats, and other soap and allied raw materials, both selling and buying, with a broad knowledge of the field and sources of supply, seeks position change on account of war conditions. For further details, write to Box No. 509, care *Soap & Sanitary Chemicals.*

Canadian PCOs Meet

The first Canadian Pest Control Operators' Conference, sponsored by the University of Montreal, in cooperation with the Canadian Pest Control Association, was held at the University, March 18, 19 and 20, and was attended by approximately 75 pest control operators. Chairmen of the various sessions included F. E. Bohman, president of the National Pest Control Association, William Buettner, association secretary, A. M. W. Carter, Director of Pesticides of the Canadian Department of Agriculture, Bartlett W. Eldredge, Waltham Chemical Co., Waltham, Mass., Father O. Fournier, Chief in Entomology, University of Montreal, R. W. Menzie, Derpo Products, Toronto, and H. A. U. Monro, Canadian Department of Agriculture. Among the visiting speakers was Dr. Alfred Weed of John Powell & Co., New York, who spoke on the topic "How Certain Insecticides Kill."

Sabadilla As Insecticide

Studies dealing with the insecticidal use of sabadilla have been carried out by the College of Agriculture of the University of Wisconsin over recent years, and an account of this work is included in the recent annual report of the university. It is reported that a series of articles is being written, reviewing the work which has been done, and evaluating the possible future position of sabadilla as an insecticide raw material. Commercialization of a process for using sabadilla in the insecticide field has been placed in the hands of the Wisconsin Alumni Research Foundation.

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"While you sits dere readin' all about how to sell after de war, Cuthbert, our customers is forgettin' us fast!"

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MAYBE you plan really to go to town with your selling "after the war." But it may be a long war, and by the time you are ready to get under way, many of your customers and prospects may have forgotten that you even exist. So why start all over again from scratch? Keep them remembering you with regular advertising in representative trade papers, the most direct and economical method.

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Tale Ends

FATTY acids may be allocated April 15, says rumor from Washington. Official quarters deny it. As far as the opportunities of the average small and medium size soaper to buy fatty acids freely are concerned, they might just as well have been allocated last Christmas.

* * *

Following rumors of soap rationing, a buying stampede hit Huntington, W. Va., last month and the equivalent of 30 days soap sales were made in one day. Customers stood in line at department store soap counters. Doesn't it stir that patriotic feeling the way Americans the country over gladly accept the cruel restrictions of a war economy, both rumored and real,—after they all get theirs!

* * *

Louse powder rumor,—over the grapevine from far off Tunisia comes a report via that well-known hot-bed of rumors, Washington, D. C., that the louse powder developed for the American Army has been tried out by Britishers in the field and that their reports are not too complimentary. Maybe the African lice are tougher!

* * *

And while rumors are still flying thick and fast,—the Insecticide and Fungicide Section of the Chemicals Branch of WPB in Washington may soon have a new chief, the resignation of the present head being reported imminent.

* * *

More coconut oil has arrived in the U. S. during the past few months than is generally suspected. Where from? Military secret. Who got it? Also a secret.

* * *

In one respect, the soap industry is lucky today if we look at things with Pollyanna eyes. Compared to most industries, the labor requirements of soap manufacturers are small per ton of soap produced.

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